IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist..

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number							
	1952	1951	1950	1949	1948	1947	1946	1945
December		53	86	108	114	126	85	38
November		52	87	112	115	124	83	36
October		52	90	114	116	119	81	23
September		54	91	115	117	121	79	22
August	49	57	96	111	123	122	77	20
July	51	60	101	108	125	116	73	
June	52	63	103	108	129	112	67	
May	52	68	102	108	130	109	67	
April	52	74	101	109	133	107	62	
March	52	78	103	111	133	105	51	
February	51	82	103	113	133	90	46	
January	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 69 and figures 1 to 138 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Canberra, Australia
- Hobart, Tasmania
- Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
- Watheroo, Western Australia

British Department of Scientific and Industrial Research, Radio Research Board:
- Falkland Is.
- Ibadan, Nigeria (University College of Nigeria)
- Inverness, Scotland
- Singapore, British Malaya
- Slough, England

Defence Research Board, Canada:
- Baker Lake, Canada
- Churchill, Canada
- Fort Chimo, Canada
- Ottawa, Canada
- Prince Rupert, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

French Ministry of Naval Armaments (Section for Scientific Research):
- Djibouti, French Somaliland
- Tananarive, Madagascar

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany

Icelandic Post and Telegraph Administration:
- Reykjavik, Iceland

Radio Regulatory Commission, Tokyo, Japan:
- Akita, Japan
- Tokyo (Kokubunji), Japan
- Wakkanai, Japan
- Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
- Christchurch, New Zealand
- Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
- Oslo, Norway
- Tromso, Norway

South African Council for Scientific and Industrial Research:
- Capetown, Union of South Africa
- Johannesburg, Union of South Africa

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
- Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Swtizerland

United States Army Signal Corps:
Adak, Alaska
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Batavia, Ohio (mobile unit)
Baton Rouge, Louisiana (Louisiana State University)
Fairbanks, Alaska
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 70 to 81 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 82 presents ionosphere character figures for Washington, D. C., during August 1952, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Table 83a gives the radio propagation quality figures (North Atlantic area) for July 1952.

In addition to the radio propagation quality figures for 00 to 12 and 12 to 24 hours UT (Universal Time or GCT) for each day, the table in this report lists some of the CRPL forecasts for North Atlantic paths for the same periods of time: (1) short-term forecasts, issued every six hours for a 12-hour period, (2) advance forecasts (semiweekly CRPL-J reports) issued from one to twenty-five days in advance. The table also gives half-day averages of geomagnetic K-indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey. Part b of the table illustrates the comparison between the short-term forecasts and the quality figures. The forecasts are plotted approximately at the time of issue, and they are intended to represent conditions in the 12-hour period following. The figure also illustrates the overall outcome of the advance forecasts, issued one to three or four days ahead, and in comparison is shown the result if these same forecasts were issued at random during the month.

The radio propagation quality figures are prepared from radio traffic data reported to CRPL by a method similar to that described in IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," now out of print. Beginning with the recalculated figures for January 1952, only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality. Observations of selected ionospheric characteristics, even though strongly correlated with radio transmission quality, and traffic reports for paths such as New York-Stockholm or New York-Tangier, previously included in the quality-figure determination with low weight, have been left out of the present calculations inasmuch as a sufficient number of homogeneous reports are now available.

The original reports are submitted on various scales and for various time intervals. The observations for each Greenwich half day are averaged on the quality scale of the original reports. These half-day indices are then adjusted to the 1 to 9 quality-figure scale. The conversion table was prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal of the departure from linearity. Each half-daily radio propagation quality figure, beginning January 1948, is the weighted mean of the reports received for that period.

These quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported,

frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

In comparison of forecasts and quality figures the following conventions apply: Short term forecasts -- direct comparison by half days, both forecast and quality figure being on the Q-scale. Only the forecasts for 00-12 and 12-24 hours are evaluated; the results for the intervening forecasts should be similar. Advance forecasts -- the whole-day forecast, on the Q scale, is compared with a whole-day index derived from the two half-daily quality figures, when different, as follows: if either half-day Q-figure is 4 or less, the whole-day index is the lower of the two; if both half-day Q-figures are 6 or more, the whole-day index is the higher of the two; if the 00-12 Q-figure is 5 and the other is greater than 5, the whole-day index is the higher; if the 00-12 Q-figure is greater than 5 and the other is 5, the whole-day index is 5.

Note. The North Pacific quality figures which were published through October 1951 have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF THE SOLAR CORONA

Tables 84 through 86 give the observations of the solar corona during August 1952, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 87 through 89 list the coronal observations obtained at Sacramento Peak, New Mexico, during August 1952, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 84 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 85 gives similarly the intensities of the first red (6374A) coronal line; and table 86, the intensities of the second red (6702A) coronal line; all observed at Climax in August 1952.

Table 87 gives the intensities of the green (5303A) coronal line; table 88, the intensities of the first red (6374A) coronal line; and table 89, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in August 1952.

The following symbols are used in tables 84 through 89: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 90 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 91 continues the new series of American relative sunspot numbers, R_A'. Beginning with 1951, the observations collected by the Solar Division, AAVSO, have been reduced according to a new procedure, such that only high quality observations of experienced observers are combined into R_A'. Observatory coefficients for each of the 28 selected observers were recomputed on data for 1948-1950, years when there was a wide range of solar activity. Otherwise, the procedure is that outlined in Publication of the Astronomical Society of the Pacific, 61, 13, 1949. The scale of the American numbers in 1951 differs from that of the reports for earlier years because of these changes, and the new series is designated R_A' rather than R_A. The American relative sunspot numbers appear monthly in these pages as communicated by the Solar Division.

OBSERVATIONS OF SOLAR FLARES

Table 92 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris), and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 93 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following four criteria: (1) C; (2) the sum of the eight Kp's; (3) the greatest Kp; and (4) the sums of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g. 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44

and 1949, in these CRPL-F reports, F65-67; for 1950, monthly in F68 and following issues. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. At the meeting of ATME held in Brussels in August 1951, it was decided that the computation of Kw would be discontinued after the month of December 1951 since Kp is available from January 1, 1940. Kw, therefore, no longer appears in these reports.

SUDDEN IONOSPHERE DISTURBANCES

Tables 94 and 95 list respectively the sudden ionosphere disturbances observed at Ft. Belvoir, Virginia, August 1952: and in England, July 1952.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.5						3.0
01	280	3.1						2.9
02	270	2.9					2.7	2.9
03	270	2.6					2.2	2.9
04	280	2.4					2.4	2.9
05	280	2.4					2.3	3.0
06	250	3.7	230	—	120	1.8	3.0	3.3
07	350	4.3	220	3.5	110	2.4	3.5	3.0
08	360	4.8	210	3.9	110	2.8	3.9	3.0
09	350	5.1	200	4.2	100	3.0	4.5	3.1
10	360	5.5	190	4.3	100	3.2	4.1	3.1
11	370	5.2	190	4.4	100	3.3	4.3	3.0
12	380	5.3	190	4.5	100	3.4	3.9	2.9
13	400	5.2	200	4.4	100	3.4	3.8	2.8
14	370	5.4	200	4.4	100	3.3	4.0	2.9
15	360	5.4	210	4.3	100	3.2	4.1	2.9
16	350	5.4	220	4.1	110	2.9	3.7	3.0
17	320	5.4	220	3.7	110	2.6	3.6	3.0
18	280	5.6	240	3.4	110	2.0	3.6	3.1
19	250	5.9	—	—	120	—	2.8	3.1
20	240	5.9					2.9	3.1
21	240	5.0					3.0	3.0
22	250	4.4					3.0	3.0
23	270	4.0					2.8	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Tromso, Norway (69.7°N, 19.0°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(345)	4.3	---	---	---	---	4.4	2.9
01	(325)	4.4	285	---	---	---	3.7	2.9
02	345	4.4	275	---	---	---	3.6	2.9
03	345	4.3	265	3.2	100	1.8	4.0	3.0
04	350	4.2	240	3.3	100	2.1	3.2	2.9
05	365	4.4	235	3.5	100	2.2	3.0	2.9
06	410	4.4	235	3.7	100	2.4	2.9	2.8
07	410	4.6	215	3.9	100	2.6	3.0	2.8
08	410	4.8	210	4.0	100	2.7	3.0	2.8
09	380	4.9	210	4.1	100	2.8	3.0	2.9
10	400	5.0	210	4.2	100	2.8	3.0	2.9
11	390	5.0	220	4.2	100	2.9	3.0	2.9
12	400	4.9	215	4.2	100	2.9	3.0	2.9
13	410	4.9	210	4.2	100	2.9	3.0	2.8
14	400	4.8	210	4.2	105	2.8		2.9
15	410	4.7	230	4.1	100	2.7	2.7	2.9
16	390	4.7	245	4.0	100	2.6	3.2	2.9
17	360	4.6	235	3.9	100	2.5	3.4	3.0
18	335	4.6	240	3.7	100	2.3	3.8	3.0
19	325	4.6	250	3.5	100	2.2	4.2	3.1
20	340	4.4	260	---	100	2.0	3.5	3.0
21	310	4.5	270	---	110	(2.0)	3.8	3.0
22	320	4.3	---	---	---	---	3.4	3.0
23	310	4.3	>290	---	---	---	4.3	3.0

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(3.8)			---	---	5.5	(2.9)
01	300	(3.6)			---	---	6.8	(2.9)
02	300	3.7	---	---	120	(1.8)	6.7	2.9
03	340	3.8	280	---	---	---	5.4	2.9
04	360	(4.0)	250	3.0	---	---	5.4	2.8
05	390	4.1	230	3.3	100	2.2	6.4	2.7
06	400	4.4	220	3.5	110	(2.3)	6.4	2.8
07	440	4.2	210	3.7	100	(2.5)	3.5	2.8
08	450	4.4	200	3.8	100	(2.8)	3.0	2.7
09	480	4.3	200	3.9	100	(2.9)	3.4	2.5
10	460	4.4	200	4.0	100	3.0	3.5	2.6
11	460	4.5	200	4.0	110	(3.0)	4.1	2.7
12	440	4.5	200	4.0	110	(3.0)	3.1	2.6
13	440	4.5	200	4.0	110	(2.9)	3.2	2.7
14	440	4.5	210	4.0	110	(2.8)		2.7
15	440	4.6	210	4.0	100	(2.8)		2.7
16	380	4.6	210	3.9	110	(2.6)		2.9
17	350	4.7	220	3.8	110	2.5		3.0
18	340	4.6	230	3.6	110	2.2		3.0
19	300	4.6	240	(3.2)	120	1.9		3.1
20	270	4.4	240	---	130	1.8		3.1
21	250	(4.0)	---	---	120	(1.8)	3.2	(3.1)
22	270	(4.0)			---	---	3.4	(3.1)
23	300	(3.8)			---	---	4.2	(2.8)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2					2.1	3.0
01	300	3.0						3.0
02	300	2.7					1.6	3.0
03	320	3.1	250	---	---	---	2.1	3.1
04	350	3.7	250	2.9	120	1.8	2.1	3.0
05	400	3.8	240	3.2	110	2.0	2.3	2.9
06	400	4.2	220	3.4	100	2.3		2.9
07	440	4.3	210	3.6	100	2.6		2.7
08	430	4.4	200	3.8	100	2.8		2.8
09	450	4.4	200	3.9	100	2.9		2.7
10	440	4.5	200	4.0	100	2.9		2.8
11	450	4.6	200	4.1	100	3.0		2.8
12	480	4.6	200	4.1	100	3.0	3.6	2.7
13	450	4.6	200	4.2	100	3.0		2.8
14	430	4.5	200	4.1	100	2.8		2.8
15	410	4.6	200	4.1	100	2.8		2.9
16	390	4.6	210	3.9	100	2.7		3.1
17	370	4.6	220	3.8	100	2.6		3.0
18	330	4.6	230	3.6	110	2.4		3.2
19	290	4.6	230	3.4	110	2.1	2.7	3.2
20	260	4.6	240	---	120	1.8		3.3
21	250	4.5					2.5	3.3
22	250	3.8						3.2
23	300	3.2						3.1

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Oslo, Norway (60.0°N, 11.1°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	4.1						3.0
01	270	3.9						3.0
02	280	3.5					1.3	3.0
03	270	3.4	---	---	110	1.4	2.8	3.0
04	300	3.7	250	2.8	100	1.5	3.0	2.9
05	350	4.0	235	3.2	105	1.8	3.1	3.0
06	400	4.2	225	3.5	110	2.1	3.1	2.9
07	375	4.6	210	3.8	105	2.4	3.4	2.9
08	380	4.7	210	4.0	100	2.7	3.6	2.9
09	375	5.0	215	4.1	100	2.8	3.5	2.9
10	375	5.0	210	4.2	100	3.0	3.5	2.9
11	380	5.2	220	4.2	100	3.0	4.0	3.0
12	395	5.0	210	4.3	100	3.0	3.9	3.0
13	390	5.0	210	4.3	100	3.0	3.6	2.9
14	400	4.9	210	4.2	100	3.0	3.5	2.9
15	370	4.9	210	4.2	105	3.0	3.2	2.9
16	360	5.0	210	4.1	105	2.8	3.0	2.9
17	340	5.0	220	4.0	110	2.6	3.4	3.0
18	310	5.1	225	3.7	110	2.4	3.2	3.1
19	295	4.9	245	3.4	115	2.0	3.4	3.1
20	270	5.0	250	---	135	1.8	3.1	3.1
21	255	4.9	---	---	---	---	3.0	3.1
22	250	4.8						3.0
23	260	4.6						3.0

Time: 15.0°E.
Sweep: 1.3 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 6

Upsala, Sweden (59.8°N, 17.6°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	3.6					2.4	2.8
01	265	3.1					2.5	2.8
02	280	3.1					2.7	2.8
03	270	3.4	270	---	---	E	3.2	2.8
04	390	3.8	245	3.0	---	(1.5)	3.6	2.9
05	365	4.1	230	3.4	115	(1.9)	3.9	2.9
06	400	4.5	220	3.6	110	2.3	3.5	2.8
07	410	4.6	215	3.9	110	2.6	4.0	2.8
08	375	5.0	210	4.0	110	2.8	4.4	2.9
09	370	5.1	210	4.2	105	2.9	4.7	2.9
10	360	5.1	205	4.2	105	3.0	5.6	3.0
11	380	5.2	205	4.3	105	3.0	5.2	2.9
12	385	5.2	200	4.3	105	3.0	5.1	2.9
13	380	5.0	205	4.3	105	3.0	4.8	2.9
14	390	4.9	210	4.3	105	3.0	4.0	2.9
15	355	5.0	210	4.2	105	2.9	3.6	3.0
16	360	5.0	210	4.1	110	2.8	3.2	2.9
17	325	5.0	215	3.9	110	2.5	3.3	3.0
18	300	5.0	230	3.6	110	2.2	4.0	3.1
19	280	4.9	240	3.2	120	1.8	3.6	3.0
20	260	5.0	250	---	---	E	3.5	3.0
21	250	5.1			---	E	3.0	2.9
22	250	4.7						2.9
23	260	4.0						2.9

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 7

Adak, Alaska (51.9°N, 176.6°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.0					3.1	2.9
01	280	3.7					2.3	2.9
02	280	3.4					2.3	2.8
03	300	3.1					2.2	2.9
04	400	3.1	270	2.6	---	E	1.6	2.7
05	420	3.9	250	3.1	120	1.9	2.8	2.7
06	400	4.5	230	3.5	110	2.3	3.6	2.8
07	380	4.8	220	3.7	110	2.6	5.1	2.8
08	420	4.7	220	3.9	110	2.9	4.8	2.8
09	430	4.8	210	4.1	110	3.0	5.4	2.7
10	440	4.8	200	4.1	100	3.1	5.7	2.7
11	420	4.9	200	4.2	100	3.2	6.2	2.8
12	450	4.9	200	4.2	110	3.2	5.2	2.8
13	430	4.8	200	4.2	110	3.1	6.1	2.8
14	400	4.9	210	4.2	110	3.1	4.3	2.9
15	410	4.7	200	4.1	110	3.0	4.1	2.9
16	390	4.8	220	4.0	110	2.9	4.2	3.0
17	360	4.7	230	3.9	110	2.6	3.9	3.0
18	330	4.9	240	3.6	110	2.2	4.1	3.1
19	290	4.9	250	---	120	1.8	3.7	3.0
20	260	5.4	---	---	---	E	3.6	3.1
21	260	5.6					4.4	3.1
22	260	5.3					4.3	3.0
23	260	4.5					4.2	3.0

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 8

Batavia, Ohio (39.1°N, 84.1°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6					3.8	2.9
01	(300)	3.3					3.3	2.8
02	(280)	3.0					3.6	2.9
03	(280)	2.4					4.2	2.9
04	(300)	2.4					3.8	2.9
05	(280)	2.4					3.9	3.0
06	260	3.4	230	---	120	2.0	3.7	3.1
07	390	4.1	220	3.5	110	2.3	4.8	2.9
08	410	4.4	220	3.9	110	2.7	5.0	2.8
09	420	4.8	200	4.0	100	3.0	5.0	2.8
10	450	4.9	190	4.2	100	3.1	5.0	2.6
11	440	4.8	200	4.2	100	3.2	5.0	2.6
12	460	4.9	190	4.3	100	3.3	5.0	2.7
13	430	5.0	200	4.3	100	3.3	5.0	2.7
14	400	5.2	200	4.3	100	3.3	4.9	2.8
15	400	5.2	200	4.2	100	3.2	5.2	2.8
16	380	5.0	210	4.2	100	3.1	4.5	2.8
17	370	5.2	210	4.0	100	2.9	4.6	2.8
18	320	5.4	220	3.7	110	2.5	3.7	3.0
19	280	5.6	230	---	120	2.0	4.7	3.1
20	240	5.5					3.5	3.1
21	240	5.4					3.1	3.0
22	(250)	4.8					3.2	3.0
23	260	3.8					3.2	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds. Mobile unit.

Table 9

San Francisco, California (37.4°N, 122.2°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.6					3.8	2.9
01	280	3.4					3.0	2.9
02	280	3.4					3.8	2.9
03	270	3.3					3.0	2.9
04	270	3.1					2.4	2.9
05	270	3.1	---	---			2.8	3.1
06	(400)	3.9	230	3.3	---	(2.0)	3.2	3.0
07	440	4.3	220	3.7	110	2.5	3.7	2.7
08	420	4.9	210	4.0	110	2.9	4.3	2.8
09	370	5.4	210	(4.2)	110	3.1	4.6	2.9
10	360	5.7	210	(4.3)	110	3.2	5.0	3.0
11	360	5.8	200	(4.4)	110	(3.2)	4.6	3.0
12	360	5.5	210	(4.5)	110	(3.3)	5.0	2.9
13	380	5.4	210	(4.4)	---	(3.2)	4.1	2.8
14	370	5.5	210	(4.4)	110	(3.3)	4.0	2.9
15	380	5.5	220	(4.2)	110	3.2	3.7	2.9
16	370	5.3	220	4.1	110	3.0	4.5	3.0
17	340	5.3	230	3.9	110	2.8	3.8	3.0
18	300	5.4	240	3.6	120	2.2	3.7	3.1
19	260	5.6	---	---	---	---	3.6	3.2
20	240	5.8					3.1	3.1
21	240	5.2					3.8	3.1
22	260	4.4					3.9	3.0
23	270	3.9					3.2	3.0

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

White Sands, New Mexico (32.3°N, 106.5°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.7					2.8	3.0
01	280	3.6					3.3	3.0
02	260	3.4					3.0	3.0
03	250	3.2					2.4	3.1
04	260	3.0					2.7	3.0
05	260	3.1	---	---	---	---	2.3	3.1
06	260	4.2	230	3.6	110	1.9	3.4	3.2
07	310	4.7	210	3.7	100	2.4	4.0	3.1
08	350	5.2	200	4.0	100	2.8	4.1	3.0
09	380	5.4	200	4.2	100	3.0	4.3	2.9
10	400	5.4	200	4.2	100	3.2	4.4	2.8
11	390	5.7	190	4.3	100	3.3	4.3	2.8
12	380	5.8	200	4.4	100	3.3	4.6	2.9
13	370	5.8	200	4.4	100	3.2	4.5	3.0
14	370	5.7	200	4.3	100	3.2	4.0	2.9
15	350	5.6	210	4.1	100	3.1	3.8	3.0
16	330	5.6	210	4.0	100	2.9	3.6	3.0
17	310	5.8	210	3.8	100	2.6	3.7	3.1
18	290	5.6	220	3.4	110	2.2	3.9	3.1
19	250	6.0					3.5	3.2
20	220	6.2					3.4	3.2
21	230	4.9					3.0	3.2
22	250	4.0					3.7	3.0
23	270	3.8					3.5	3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Baton Rouge, Louisiana (30.5°N, 91.2°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6					3.4	2.8
01	300	3.4					3.2	2.9
02	300	3.3					3.4	3.0
03	300	3.4					3.1	3.0
04	300	3.2					2.6	3.0
05	280	3.2					3.6	3.0
06	300	4.0	240	---	130	2.0	3.2	3.2
07	370	4.6	240	3.6	120	2.5	4.3	3.0
08	420	4.7	220	4.0	120	2.8	5.9	2.8
09	440	5.0	220	4.2	120	3.1	6.4	2.7
10	450	5.2	200	4.2	120	3.2	6.0	2.6
11	450	5.4	210	4.3	120	3.4	6.2	2.7
12	420	5.5	210	4.3	120	3.4	4.6	2.8
13	410	5.6	220	4.3	120	3.4	5.0	2.7
14	400	5.8	240	4.3	120	(3.3)	4.8	2.8
15	390	5.9	240	4.2	120	3.2	4.8	2.8
16	370	5.6	230	4.0	120	3.0	4.6	2.9
17	340	5.7	240	3.8	120	2.6	4.2	3.0
18	310	5.9	250	3.4	120	2.1	4.0	3.0
19	280	6.0					3.8	3.0
20	260	5.8					3.8	3.0
21	260	5.1					4.1	3.0
22	280	4.3					3.8	3.0
23	300	4.0					3.4	2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 12

Okinawa I. (26.3°N, 127.8°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	5.2					3.6	2.7
01	320	4.7					4.0	2.7
02	300	4.4					3.0	(2.9)
03	300	4.2					2.8	2.9
04	300	3.5					2.9	2.9
05	270	3.8					2.4	3.0
06	270	5.0	260	---	120	(1.9)	3.7	3.2
07	290	5.6	240	---	120	2.4	4.4	3.2
08	310	5.3	240	4.1	120	(2.8)	5.3	3.1
09	380	5.3	220	4.3	120	3.2	5.9	2.9
10	440	5.6	<230	4.5	120	3.4	5.8	2.7
11	430	6.0	(230)	4.5	120	3.4	6.4	2.7
12	410	6.6	---	4.5	120	3.5	5.9	2.7
13	420	7.0	<240	4.5	120	3.4	7.3	2.6
14	420	7.4	240	4.4	120	3.4	5.8	2.6
15	400	7.8	---	4.3	120	3.2	6.4	2.6
16	360	8.2	250	4.2	120	3.0	5.6	2.7
17	320	8.5	250	4.0	120	2.6	5.8	2.9
18	280	8.4	270	---	---	---	5.8	3.1
19	260	7.4					4.5	3.1
20	290	5.9					4.0	2.8
21	320	5.3					3.2	2.7
22	330	(5.1)					3.4	2.6
23	330	5.2					3.2	2.7

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Maui, Hawaii (20.8°N, 156.5°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.9					2.6	2.8
01	300	4.9					2.0	2.9
02	290	4.8					2.3	2.9
03	300	4.6					2.4	2.8
04	280	4.2					2.3	3.0
05	280	3.9					2.0	3.0
06	270	4.0	---	---	---	---	2.3	3.1
07	330	5.0	240	3.6	120	2.2	2.9	3.0
08	360	5.5	220	4.0	120	2.7	4.7	2.9
09	410	5.3	210	4.3	120	3.0	5.0	2.6
10	460	5.4	210	4.4	110	3.3	5.3	2.4
11	480	6.3	220	4.4	110	3.4	5.0	2.4
12	440	7.3	210	4.4	120	3.5	4.7	2.5
13	410	8.2	220	4.4	120	3.5	4.5	2.6
14	390	8.8	220	4.4	120	3.4	4.7	2.6
15	380	9.6	220	4.3	120	3.3	4.7	2.7
16	330	10.1	240	4.2	120	3.1	4.3	2.9
17	300	10.5	230	4.0	120	2.7	4.0	3.0
18	270	9.4	240	3.6	120	2.2	3.9	3.2
19	260	8.5	---	---			3.4	3.1
20	250	6.9					3.2	3.0
21	270	6.1					2.9	2.9
22	280	5.5					2.9	2.9
23	290	5.2					2.4	2.8

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Puerto Rico, W.I. (18.5°N, 67.2°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.8					3.0	3.0
01	[illegible]	5.8					2.6	3.1
02	240	5.4					3.0	3.1
03	250	4.9					2.9	3.0
04	[illegible]	4.6					2.3	3.1
05	260	4.4					2.2	3.1
06	[illegible]	4.2	---	---	(100)	---	3.6	3.2
07	[illegible]	[illegible]	220	(3.5)	100	(2.1)	3.7	3.3
08	280	[illegible]	210	(4.0)	100	2.7	4.3	3.4
09	[illegible]	5.5	200	4.2	(100)	3.0	4.8	3.2
10	370	[illegible]	200	4.4	100	3.3	4.5	3.0
11	[illegible]	6.1	200	4.5	100	3.4	4.9	2.8
12	[illegible]	7.0	200	4.5	100	3.5	4.6	2.8
13	340	8.2	210	4.5	100	3.5	4.9	2.9
14	320	[illegible]	210	4.4	100	3.4	5.1	2.9
15	310	[illegible]	210	4.3	100	3.3	5.4	3.0
16	290	[illegible]	210	4.2	100	3.1	4.9	3.1
17	280	8.9	210	4.0	100	2.8	5.2	3.1
18	260	8.4	220	---	100	---	4.5	3.1
19	240	8.0	---	---			4.2	3.2
20	240	6.9					3.8	3.1
21	250	6.4					3.2	3.1
22	260	[illegible]					3.2	3.0
23	270	5.4					3.0	2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Panama Canal Zone (9.4°N, 79.9°W) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.8					2.3	3.0
01	260	5.0						2.9
02	260	5.0					2.7	2.9
03	260	4.5					2.3	3.0
04	250	4.0					1.1	3.0
05	260	3.6					2.7	3.0
06	260	3.7	---	---	(140)	---	3.0	3.0
07	250	5.0	230	---	120	2.1	4.0	3.2
08	360	5.3	220	4.2	110	2.8	3.8	2.9
09	370	5.5	220	4.3	110	3.1	4.3	2.6
10	430	6.4	210	4.4	110	3.3	4.3	2.5
11	440	7.5	210	4.5	110	3.5	4.3	2.5
12	440	8.2	210	4.5	110	3.5	4.4	2.5
13	400	9.0	210	4.5	110	3.5	4.6	2.6
14	360	9.6	210	4.4	110	3.4	4.4	2.7
15	340	10.2	220	4.3	110	3.3	4.7	2.7
16	320	10.6	220	4.2	110	3.0	4.2	2.8
17	290	10.5	220	4.0	110	2.6	4.2	3.0
18	270	9.7	230	---	120	(2.0)	3.3	3.0
19	240	8.7					3.3	2.9
20	260	8.2					3.2	2.9
21	260	7.5					2.6	2.9
22	260	7.0					2.4	2.9
23	270	6.0					2.2	2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Resolute Bay, Canada (74.7°N, 94.9°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.4	200	3.0	100	2.0		3.0
01	270	4.3	220	3.0	110	2.0		3.1
02	300	4.3	220	3.0	110	2.0		3.0
03	300	4.0	210	3.3	100	2.2		3.0
04	340	4.0	220	3.4	100	2.3		3.0
05	390	4.2	200	3.5	100	2.4		2.9
06	400	4.3	210	3.6	100	2.6		2.9
07	440	4.4	200	3.8	100	2.7		2.7
08	430	4.4	200	3.8	100	2.8		2.6
09	460	4.4	200	3.8	100	2.8		2.6
10	500	(4.3)	200	3.8	100	2.8		(2.5)
11	(450)	(4.4)	200	3.8	100	2.9		(2.6)
12	(440)	4.4	200	3.8	100	3.0		(2.4)
13	G	<4.4	200	3.9	100	2.9		G
14	(440)	4.4	200	4.0	100	3.0		(2.5)
15	G	<4.3	200	3.8	100	2.9		G
16	420	4.4	200	3.8	100	2.7		2.8
17	370	4.5	200	3.8	100	2.7		2.8
18	380	4.4	200	3.7	100	2.6		2.9
19	400	4.5	200	3.5	100	2.5		2.8
20	330	4.4	210	3.5	100	2.3		3.0
21	300	4.3	210	3.3	100	2.2		3.0
22	280	4.3	220	3.0	100	2.0		3.0
23	270	4.0	220	3.0	110	2.0		3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Point Barrow, Alaska (71.3°N, 156.8°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(3.8)	---	---	100	---	5.6	(3.1)
01	260	(3.9)	---	---	100	---	7.0	3.1
02	250	3.8	---	---	100	1.6	6.3	3.2
03	280	(3.8)	230	(3.0)	100	---	6.0	(3.1)
04	(320)	(4.0)	220	(3.2)	100	(2.0)	4.2	(3.0)
05	---	(4.1)	(210)	(3.4)	100	(2.1)	5.0	---
06	(380)	(4.5)	220	(3.5)	100	2.3	4.6	(3.0)
07	(400)	(4.4)	210	3.6	100	(2.4)	4.8	(2.9)
08	(400)	(4.4)	210	(3.8)	100	2.6	5.0	(2.9)
09	(420)	(4.5)	210	3.8	100	2.5	4.6	(2.8)
10	(460)	4.5	200	3.9	100	2.5	4.2	2.6
11	420	4.5	200	4.0	100	---		2.8
12	(500)	(4.4)	220	4.0	100	---		(2.5)
13	450	4.5	210	4.0	100	(2.9)		2.8
14	(420)	4.5	200	4.0	100	(2.9)		2.8
15	410	4.7	210	4.0	100	(2.7)		2.8
16	380	4.8	(210)	3.9	100	(2.5)		2.9
17	370	4.6	210	3.8	100	(2.4)		3.0
18	340	(4.6)	(210)	(3.7)	100	(2.4)		(3.1)
19	310	4.5	210	(3.6)	100	2.2		3.1
20	(320)	4.2	220	<3.5	100	<2.4	4.2	3.2
21	(290)	(4.1)	---	---	---	---	4.5	3.1
22	280	(3.8)	---	---	---	---	6.0	(3.2)
23	270	(3.9)	---	---	---	---	5.0	(3.1)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 18

Kiruna, Sweden (67.8°N, 20.5°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	4.4	---	---	100	1.9	4.0	
01	300	4.3	---	---	100	1.9	4.2	
02	335	4.2	260	3.0	105	1.9	3.8	
03	345	4.2	250	3.1	105	2.0	3.7	
04	390	4.4	240	3.4	105	2.2		
05	400	4.5	240	3.7	105	2.4	3.1	
06	370	4.8	230	3.8	105	2.7		
07	410	4.8	220	3.9	105	2.8		
08	400	4.9	210	4.0	105	2.9	3.2	
09	400	5.0	215	4.0	105	2.9		
10	400	5.1	205	4.1	105	3.0		
11	400	5.1	210	4.1	105	3.0		
12	415	4.9	210	4.1	105	3.0		
13	415	5.0	220	4.1	105	3.0		
14	400	4.8	210	4.0	105	2.9		
15	400	4.8	210	4.0	105	2.8	3.0	
16	360	4.8	225	3.9	105	2.8		
17	360	4.8	230	3.8	110	2.7	3.0	
18	330	4.8	245	3.7	110	2.5	3.5	
19	310	4.8	250	3.4	110	2.2	3.9	
20	300	4.5	250	3.1	110	2.0	4.2	
21	300	4.3	---	---	105	1.8	4.1	
22	300	4.1	---	---	105	1.8	4.1	
23	(290)	4.2	---	---	---	1.8	4.2	

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 19

Fairbanks, Alaska (64.9°N, 147.8°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(4.1)			---	---	4.3	(3.0)
01	310	(4.0)			---	---	5.3	(3.0)
02	330	(4.1)	---	---	120	(1.5)	6.6	(2.9)
03	350	(4.4)	260	---	---	---	6.4	(2.9)
04	370	(4.3)	260	(3.1)	---	---	6.4	(2.9)
05	380	(4.5)	230	3.4	110	2.3	6.6	(2.8)
06	380	(4.6)	210	3.5	100	2.3	6.4	(2.8)
07	420	(4.6)	200	3.7	100	(2.4)	5.4	2.8
08	430	4.5	200	3.8	100	(2.7)	4.4	2.7
09	430	4.5	200	4.0	100	(2.8)	3.7	2.7
10	460	4.4	200	4.0	100	(2.8)		2.6
11	530	4.5	200	4.0	100	2.8		2.4
12	480	4.5	210	4.0	100	(3.0)	3.5	2.6
13	480	4.6	210	4.1	110	(2.9)		2.6
14	460	4.6	210	4.0	110	(2.8)	3.0	2.6
15	430	4.8	220	4.0	110	(2.6)		2.7
16	420	4.7	220	4.0	110	2.5		2.7
17	380	4.6	220	3.8	110	2.4		2.8
18	340	4.6	240	3.6	110	(2.2)	2.9	3.0
19	300	4.4	240	---	120	(2.1)	2.4	3.0
20	280	(4.4)	250	---	130	1.8	3.5	3.1
21	270	(4.3)	---	---	---	---	3.8	(3.1)
22	270	(4.0)	---	---	---	---	4.0	(3.0)
23	280	(3.9)			---	---	4.3	(3.0)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 20

Baker Lake, Canada (64.3°N, 96.0°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.0			100	1.5	3.3	3.0
01	240	4.0			100	1.4	3.6	3.0
02	240	3.8	---	---	100	1.6	2.4	3.0
03	240	3.8	240	---	100	1.8	3.6	3.1
04	280	3.9	220	2.9	100	1.9		3.2
05	300	3.8	210	3.1	100	2.2		3.0
06	400	4.0	200	3.5	100	2.4		2.9
07	480	4.2	200	3.8	100	2.7		2.7
08	460	4.2	200	3.9	100	2.9		2.6
09	420	4.5	200	4.0	100	3.0		2.7
10	440	4.7	200	4.0	100	3.4		2.7
11	440	4.8	200	4.0	100	3.3		2.7
12	470	4.8	200	4.1	100	3.4		2.7
13	400	4.9	200	4.0	100	3.2		2.8
14	400	5.0	200	4.0	100	3.1		2.7
15	380	5.0	200	4.0	100	3.0		2.8
16	380	5.0	200	4.0	100	2.9		2.9
17	370	4.9	200	3.9	100	2.8		2.8
18	350	4.9	200	3.8	100	2.6	3.4	2.9
19	320	4.8	200	3.6	100	2.5	6.2	3.0
20	300	4.7	210	3.4	100	2.1	6.8	3.0
21	270	4.5	240	3.0	100	1.9	5.4	3.0
22	250	4.2	---	---	100	1.8	4.0	3.1
23	250	4.0			100	1.7	4.2	3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 21

Reykjavik, Iceland (64.1°N, 21.8°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(320)	(3.7)					4.4	---
01	---	---					3.8	---
02	---	---					4.2	---
03	---	(3.6)			---	---	4.2	(3.0)
04	(340)	3.8	---	---	110	---	4.2	(2.9)
05	(330)	4.0	240	3.2	110	2.3	3.1	3.0
06	360	4.2	240	3.4	120	2.4		2.8
07	380	4.2	210	3.6	100	2.6		2.8
08	390	4.4	200	3.9	100	2.7		2.9
09	390	4.7	200	4.0	100	2.8		3.0
10	400	4.7	200	4.0	100	3.0		3.0
11	380	4.7	210	4.0	100	3.1		3.0
12	420	4.7	200	4.1	100	3.1		2.9
13	420	4.8	220	4.1	100	3.1		2.8
14	410	4.8	210	4.1	100	2.9		2.9
15	400	4.8	210	4.1	100	(2.9)		2.8
16	400	4.8	220	4.0	100	3.0		2.9
17	360	4.6	220	3.8	100	2.8	3.4	3.0
18	350	4.5	220	3.8	110	2.6	4.4	3.1
19	320	4.5	230	3.5	110	2.6	4.5	3.1
20	320	4.5	---	---	110	---	4.6	3.1
21	300	4.4	---	---	120	---	5.0	3.0
22	320	4.0			---	---	5.6	3.1
23	(310)	(3.8)			---	---	4.1	(3.0)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 22

Churchill, Canada (58.8°N, 94.2°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(4.0)					8.0	3.2
01	280	3.7			---	---	7.1	2.9
02	290	(3.5)			---	1.4	6.0	(3.0)
03	280	3.5			120	2.0	6.0	3.2
04	280	3.4			120	3.0	6.6	3.0
05	250	3.8	---	---	110	2.4	5.8	3.0
06	340	4.0	240	3.7	100	3.0	6.5	2.9
07	G	<4.3	250	4.0	100	3.8	6.0	G
08	470	<4.5	220	4.1	100	3.6	8.0	G
09	490	<4.5	220	4.2	100	3.5	7.4	2.6
10	480	4.6	220	4.1	100	3.2	3.9	2.6
11	600	<4.4	210	4.2	100	3.2	7.0	2.3
12	470	4.8	210	4.2	100	3.2	8.4	2.5
13	420	5.0	210	4.3	100	3.2	5.6	2.7
14	400	5.0	210	4.2	100	3.2	3.1	2.8
15	390	5.0	210	4.2	100	3.1		2.8
16	380	5.1	220	4.0	100	3.2		2.9
17	370	5.0	220	4.0	100	3.0		2.9
18	360	5.0	230	3.8	110	3.0	3.6	2.8
19	320	4.8	250	3.6	120	3.0	5.0	3.0
20	300	4.4	---	---	110	2.6	5.5	2.9
21	280	4.2			120	2.0	8.0	3.1
22	280	4.1			110	(2.2)	8.8	3.1
23	290	(3.9)			---	---	9.4	(3.0)

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 23

Fort Chimo, Canada (58.1°N, 68.3°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6			100	2.5	5.5	2.9
01	300	3.3			100	2.1	4.4	2.8
02	300	3.3			100	2.2	4.6	2.9
03	300	3.2			100	2.3	4.0	3.0
04	300	3.6	---	---	100	2.8	4.8	3.0
05	320	3.8	260	3.7	100	3.0	4.5	(3.0)
06	450	4.0	260	3.9	100	3.2	4.8	G
07	400	4.4	240	4.0	100	3.3	4.6	2.8
08	410	(4.4)	230	4.0	100	3.2	4.2	2.5
09	570	4.4	210	4.0	100	3.2	4.0	G
10	430	4.6	200	4.0	100	3.2		2.6
11	420	4.8	200	4.2	100	3.2		2.7
12	400	4.9	200	4.2	100	3.2		2.8
13	390	5.0	200	4.1	100	3.3		2.8
14	390	5.0	200	4.1	100	3.2		2.7
15	400	4.8	210	4.0	100	3.1		[illegible]
16	400	4.8	240	4.0	100	3.3	4.2	2.6
17	360	4.9	250	3.9	100	3.0		2.8
18	360	4.5	260	3.7	100	3.0	4.0	2.9
19	300	4.0	240	---	100	2.9	4.8	3.0
20	280	4.0			100	2.4	4.5	3.0
21	270	3.8			110	2.0	5.3	3.0
22	280	3.7			110	2.4	6.0	2.8
23	300	3.5			100	2.4	5.4	2.8

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 24

Prince Rupert, Canada (54.3°N, 130.3°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.7			---	---	1.2	2.7
01	300	2.0			---	---	2.0	2.8
02	310	2.0			---	---	2.0	2.8
03	310	2.0			---	---	3.0	2.7
04	300	2.6			110	1.1	2.0	2.7
05	360	3.5	240	2.8	110	1.7	2.3	2.7
06	420	4.0	220	3.3	100	2.1	3.2	2.5
07	420	4.2	210	3.6	100	2.4	3.2	2.6
08	450	4.3	200	3.8	100	2.6	3.4	2.5
09	460	4.3	200	3.9	100	2.9	3.7	2.5
10	480	4.6	200	4.0	100	3.0	4.2	2.4
11	450	4.7	200	4.1	100	3.1	4.4	2.4
12	460	4.8	200	4.2	100	3.1	5.0	2.5
13	420	4.9	200	4.2	100	3.2	4.5	2.5
14	440	4.9	200	4.3	100	3.1	4.7	2.5
15	450	4.8	200	4.2	100	3.1	4.0	2.5
16	420	4.8	210	4.1	100	3.0	3.6	2.6
17	400	4.8	210	4.0	100	2.8		2.7
18	360	4.8	220	3.8	100	2.6	3.0	2.8
19	310	4.8	240	3.5	110	2.3	3.1	2.9
20	280	5.0	240	---	120	1.9	3.4	2.9
21	260	4.8			---	E	4.0	2.9
22	250	4.4					4.4	2.9
23	270	3.4					3.4	2.8

Time: 120.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 25

Winnipeg, Canada (49.9°N, 97.4°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.1						2.7
01	300	3.0			---	---	3.1	2.9
02	320	2.9			---	---	3.5	2.8
03	300	3.0			---	---	5.0	2.9
04	290	3.0			---	---	3.8	2.9
05	260	3.3	---	---	120	1.9	3.1	3.1
06	420	<3.8	240	3.3	110	2.2	3.4	2.8
07	440	4.1	220	3.7	110	2.5	3.2	2.7
08	450	4.2	200	3.8	110	2.8	4.0	2.7
09	460	4.7	200	4.0	100	3.0		2.6
10	430	4.8	200	4.2	110	3.1	4.4	2.6
11	460	4.8	200	4.2	110	3.2	4.8	2.7
12	460	4.9	200	4.2	110	3.2	4.7	2.7
13	440	5.0	200	4.3	110	3.3	4.8	2.7
14	420	5.0	200	4.3	110	3.2	4.1	2.7
15	410	5.0	210	4.2	110	3.1		2.8
16	400	5.0	210	4.1	110	3.0		2.8
17	380	5.1	210	4.0	110	2.8		2.9
18	340	5.2	230	3.8	110	2.6		2.9
19	300	5.2	240	3.5	120	2.2		3.0
20	280	5.1	---	---	---	1.8	2.4	3.0
21	260	4.8					2.6	3.0
22	280	4.0						2.9
23	290	3.3						2.9

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 26

St. John's, Newfoundland (47.6°N, 52.7°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.5					3.4	2.7
01	300	3.2					3.5	2.8
02	290	3.0					3.7	2.8
03	270	2.7					3.2	2.8
04	250	3.2	260	---	130	1.6	2.8	3.0
05	350	<3.8	240	3.4	120	2.2	3.3	3.0
06	(340)	4.3	220	3.7	110	2.5		2.8
07	380	4.5	210	4.0	110	2.8	4.0	2.9
08	360	5.0	220	4.1	110	3.0	3.9	3.0
09	380	5.0	200	4.3	100	3.2	4.0	3.0
10	400	5.0	200	4.3	100	3.3	4.8	2.8
11	400	5.1	200	4.4	100	3.3	4.0	2.8
12	400	5.1	200	4.4	100	3.4		2.8
13	380	5.1	210	4.4	100	3.3	3.5	2.9
14	390	5.1	210	4.3	100	3.2		2.8
15	380	5.3	210	4.2	100	3.1		2.8
16	340	5.6	220	4.0	110	2.8		2.9
17	330	5.4	230	3.8	110	2.5	3.9	3.0
18	300	5.9	240	3.4	120	2.2	4.1	3.0
19	260	5.8	250	2.5	140	1.8	2.0	3.0
20	250	5.6					3.0	3.0
21	250	4.9					2.8	2.9
22	260	4.3						2.9
23	280	3.7					3.2	2.8

Time: 60.0°W.
Sweep: 0.6 Mc to 25.0 Mc in 15 seconds.

Table 27

Schwarzenburg, Switzerland (46.8°N, 7.3°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.7					4.0	3.2
01	300	4.4					3.0	3.1
02	295	4.1						3.1
03	280	4.0					2.5	3.1
04	270	3.5					2.6	3.2
05	235	4.0	275	2.7	---	---		3.2
06	275	4.5	210	3.4	100	2.1		3.3
07	325	4.8	220	3.8	100	2.5	4.5	3.1
08	300	5.1	200	4.0	100	2.8	5.1	3.3
09	340	5.4	200	4.2	100	3.0	5.0	3.2
10	325	5.4	200	4.4	100	3.1	5.0	3.3
11	330	5.6	200	4.4	100	3.2	5.0	3.3
12	350	5.4	200	4.5	100	3.2	5.5	3.2
13	350	5.8	200	4.5	100	3.2	4.5	3.2
14	360	5.6	200	4.4	100	3.2		3.1
15	345	5.6	200	4.4	100	3.1	4.0	3.2
16	330	5.5	200	4.2	100	3.0	4.0	3.3
17	300	6.0	200	4.1	100	2.8	5.1	3.3
18	300	5.9	220	3.9	100	2.5	5.0	3.2
19	270	6.4	---	---	---	---	5.4	3.4
20	245	6.9					4.1	3.4
21	250	6.4					4.3	3.5
22	250	5.7					4.5	3.3
23	250	5.1					4.0	3.2

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds

Table 28

Ottawa, Canada (45.4°N, 75.7°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.1						2.8
01	310	2.8						2.9
02	300	2.7					3.0	2.9
03	320	2.3					2.4	2.9
04	280	2.5	---	---			3.0	3.0
05	270	3.3	250	3.0	130	1.8	3.0	3.1
06	280	3.8	230	3.5	120	2.3	2.8	2.9
07	(550)	4.0	230	3.8	120	2.6	3.8	G
08	G	4.2	220	4.0	120	2.9	4.0	G
09	410	4.4	220	4.1	120	3.1	4.2	2.8
10	420	4.8	220	4.2	120	3.2	4.0	2.8
11	430	5.0	210	4.3	120	3.3	4.0	2.8
12	430	5.0	220	4.4	120	3.5	4.5	2.8
13	460	5.0	220	4.3	120	3.2	4.4	2.7
14	400	5.2	230	4.3	120	3.3	4.5	2.8
15	410	5.1	230	4.2	120	3.2	3.3	2.8
16	390	5.2	230	4.0	120	3.0	3.0	2.9
17	350	5.4	240	3.9	120	2.8	3.0	2.9
18	320	5.8	250	3.6	120	2.3		3.0
19	290	5.8	250	---	130	1.9		3.0
20	270	5.3						3.1
21	270	5.0						2.9
22	280	4.4						3.0
23	300	3.8						2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 29

Wakkanai, Japan (45.4°N, 141.7°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(5.6)					2.8	(2.6)
01	320	5.0					3.0	2.8
02	310	4.6					3.0	2.8
03	300	4.6					2.6	2.7
04	300	(4.6)					2.6	(2.7)
05	350	5.2	300	3.3	120	2.0	3.0	2.7
06	(380)	(5.4)	---	---	120	2.6	4.6	(2.8)
07	(400)	(5.9)	---	---	120	2.9	5.4	(2.8)
08	(350)	(5.7)	---	---	120	3.0	6.0	(2.8)
09	(390)	(5.8)	---	---	120	3.0	6.0	(2.8)
10	(380)	(5.5)	---	---	130	3.2	6.0	(2.9)
11	---	(5.8)	---	---	120	3.2	6.0	(2.8)
12	(410)	(5.8)	---	---	120	3.1	5.8	(2.6)
13	(450)	(5.7)	---	---	120	---	4.1	(2.6)
14	(410)	5.8	---	---	120	3.0	5.5	2.6
15	(390)	5.6	---	4.3	120	2.8	5.6	2.7
16	390	5.7	300	4.0	120	2.8	4.3	2.8
17	380	5.7	---	---	120	2.5	5.0	2.8
18	(340)	(5.5)	---	---	130	2.0	6.0	(2.8)
19	(320)	(5.5)					4.9	(2.8)
20	---	---					4.3	---
21	---	---					3.2	---
22	(310)	---					3.1	---
23	(400)	---					3.6	---

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 2 minutes.

Table 30

Akita, Japan (39.7°N, 140.1°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.4					4.9	3.0
01	290	5.4					4.1	(3.0)
02	270	5.3					3.9	2.9
03	270	5.0					3.8	3.0
04	270	4.8					3.8	3.0
05	270	4.8	260	3.0	110	1.8	3.7	3.1
06	290	5.6	240	3.8	110	2.5	5.0	3.0
07	290	6.0	240	4.2	110	2.8	6.2	3.1
08	300	6.3	---	---	110	3.0	7.3	3.2
09	(310)	(6.3)	---	---	110	3.2	7.6	(3.3)
10	(380)	(5.6)	---	4.6	110	3.3	8.2	(2.9)
11	(350)	6.2	---	4.6	110	3.4	7.2	(3.0)
12	(400)	5.9	220	4.6	110	3.4	7.5	2.8
13	390	6.1	240	4.6	110	3.3	7.1	2.8
14	350	6.0	250	4.6	110	3.2	7.0	2.9
15	360	6.4	---	4.4	110	3.1	6.6	3.0
16	320	6.2	---	4.4	110	3.0	5.4	3.0
17	300	6.2	240	4.0	110	2.6	5.6	3.1
18	280	6.1	---	---	110	2.2	6.0	3.1
19	270	6.5	---	---	---	---	5.6	3.1
20	270	6.7					5.4	3.2
21	280	6.3					5.0	3.1
22	290	6.0					4.9	3.0
23	300	5.8					5.4	2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutee, manual operation.

Table 31

Tokyo, Japan (35.7°N, 139.5°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.0					4.9	2.7
01	290	5.9					5.6	2.8
02	280	5.6					5.5	2.8
03	270	5.2					4.7	2.8
04	280	4.6					3.3	2.8
05	260	4.6	260	---	120	1.6	3.2	3.0
06	300	5.5	240	3.6	110	2.2	4.4	3.0
07	300	6.2	---	4.1	110	2.7	5.8	3.0
08	300	6.3	---	4.3	110	3.0	6.7	3.1
09	330	6.0	---	4.4	110	3.2	6.8	2.9
10	370	6.2	---	4.6	110	3.3	8.1	2.8
11	380	6.0	240	4.6	110	3.3	8.5	2.8
12	390	6.1	220	4.6	110	3.4	7.2	2.7
13	400	6.6	---	4.5	110	3.2	8.0	2.8
14	360	7.0	230	4.4	110	3.2	6.7	2.7
15	340	6.8	240	4.4	110	3.2	6.0	2.8
16	330	6.7	240	4.2	110	2.9	4.8	2.9
17	310	6.8	240	3.8	110	2.5	5.3	2.9
18	300	7.2	260	---	110	2.0	6.8	3.0
19	270	7.4					6.7	3.0
20	270	7.0					6.0	2.9
21	310	5.7					4.8	2.8
22	310	5.9					4.8	2.7
23	310	6.0					5.6	2.7

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 32

Yamagawa, Japan (31.2°N, 130.6°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2					4.3	2.8
01	300	5.4					4.5	3.0
02	270	5.3					4.5	3.0
03	270	5.0					3.8	3.0
04	260	4.6					3.5	3.1
05	260	4.2					3.4	3.1
06	250	5.0	250	---	100	1.9	3.5	3.2
07	260	5.7	230	---	100	2.4	4.5	3.3
08	270	6.2	220	---	100	2.8	5.5	3.3
09	300	(6.2)	250	4.5	100	3.0	6.8	(3.2)
10	330	(6.3)	200	4.5	100	3.2	6.0	(3.0)
11	(380)	(6.4)	---	---	100	3.3	7.1	(2.8)
12	350	(7.1)	---	---	100	3.3	7.0	(2.8)
13	360	7.0	---	4.7	100	3.3	6.0	2.8
14	360	7.2	240	4.6	100	3.3	6.0	2.8
15	340	7.8	240	4.5	100	3.1	6.0	3.0
16	310	8.0	230	4.3	100	3.0	5.0	3.0
17	300	7.9	220	4.0	100	2.7	5.0	3.0
18	290	7.8	230	3.6	100	2.2	4.6	3.1
19	260	7.4					4.7	3.1
20	290	6.9					4.7	3.0
21	280	6.2					4.5	3.0
22	300	5.2					4.7	2.8
23	300	4.8					4.5	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 2 minutes.

Table 33

Guam I. (13.6°N, 144.9°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	4.0					2.5	2.7
01	350	3.4					2.4	2.8
02	350	3.2					2.4	2.8
03	350	2.8					2.1	2.9
04	300	3.3					2.0	3.1
05	250	(3.4)					2.2	(3.4)
06	240	4.1			---	---	2.4	3.4
07	260	5.8	230	---	120	2.2	3.6	3.4
08	280	6.1	220	4.2	110	2.7	5.0	3.2
09	340	6.4	220	4.4	110	3.0	6.0	2.9
10	360	6.8	220	4.4	110	3.2	5.3	2.7
11	400	7.1	220	4.5	110	(3.3)	5.0	2.6
12	410	7.7	210	4.5	110	(3.4)	4.7	2.5
13	420	7.8	200	4.5	110	3.3	4.9	2.5
14	400	8.2	210	4.4	110	3.2	4.6	2.5
15	380	8.6	220	4.4	110	3.2	4.8	2.5
16	360	8.6	220	4.3	110	2.9	4.8	2.6
17	330	9.0	220	4.1	120	2.6	4.8	2.7
18	280	9.3	240	---	120	---	4.6	2.9
19	250	8.9					4.2	3.0
20	260	8.0					3.4	3.0
21	280	6.3					3.4	2.8
22	320	5.5					3.2	2.8
23	340	4.3					2.8	2.7

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 34

Huancayo, Peru (12.0°S, 75.3°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	4.7						3.4
01	240	4.2						3.4
02	260	4.0						3.2
03	260	3.4						3.2
04	270	3.1						3.2
05	250	2.8						3.2
06	280	2.4			---	E		2.9
07	240	5.4	---	---	110	2.1	5.4	3.2
08	(280)	7.0	220	---	110	2.6	8.2	3.0
09	(310)	7.3	210	4.2	110	2.9	9.8	2.7
10	350	7.1	200	4.3	100	---	10.0	2.6
11	370	7.0	200	4.4	100	---	10.2	2.6
12	380	7.0	190	4.4	100	---	10.2	2.6
13	370	7.0	200	4.4	100	---	10.1	2.6
14	370	7.0	200	4.3	100	---	10.0	2.6
15	(340)	7.1	200	4.2	110	---	9.4	2.5
16	(280)	7.4	200	---	110	---	8.6	2.7
17	240	7.2			110	---	5.9	2.7
18	270	7.0			---	---		2.8
19	280	6.2						2.7
20	270	6.2						3.0
21	240	6.5						3.2
22	220	6.0						3.3
23	230	5.3						3.4

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 35

Watheroo, W. Australia (30.3°S, 115.9°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.4					2.2	3.0
01	250	3.6					2.4	3.1
02	240	3.7					2.2	3.2
03	230	3.6					2.5	3.3
04	230	3.6					2.4	3.2
05	220	3.3					2.4	3.3
06	230	3.0					2.0	3.2
07	220	3.5				---		3.4
08	220	5.6	210	2.5		2.0	2.0	3.6
09	240	6.5	220	3.6		2.5	3.0	3.5
10	250	6.7	220	4.0		2.8	3.1	3.5
11	250	6.9	220	4.1		3.0	3.0	3.4
12	260	6.9	200	4.2		3.0	3.2	3.4
13	250	6.6	210	4.2		3.0	3.4	3.3
14	260	6.9	210	4.2		2.9	3.4	3.4
15	250	7.0	220	4.0		2.8	3.5	3.4
16	230	6.6	220	3.5		2.5	3.2	3.5
17	220	6.0	---	---		1.8	3.3	3.5
18	220	4.4					3.2	3.5
19	230	3.4					3.0	3.4
20	245	3.2					3.0	3.2
21	240	3.2					2.4	3.3
22	250	3.6					2.5	3.1
23	250	3.5					2.3	3.1

Time: 120.0°E.
Sweep: 16.0 Mc to 0.516 Mc in 15 minutes, automatic operation, June 1-9; 1.0 Mc to 16.0 Mc in 2 minutes, June 10-30.

Table 36

Resolute Bay, Canada (74.7°N, 94.9°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0	(230)	3.0	110	1.8		3.0
01	250	4.0	---	---	110	1.9		3.1
02	250	3.9	(240)	2.6	120	1.9		3.0
03	280	4.0	240	3.0	120	1.9		3.0
04	300	4.0	230	3.0	110	2.0		3.0
05	380	4.0	220	3.4	100	2.3		3.0
06	400	4.0	220	3.5	100	2.4		2.7
07	G	(3.8)	220	3.5	100	2.5		G
08	G	<3.8	220	3.7	100	2.7		G
09	G	(4.3)	200	3.8	100	2.8		G
10	G	<4.0	220	3.8	100	2.8		G
11	G	<3.8	220	3.8	100	2.9		G
12	G	<3.8	200	3.8	100	2.9		G
13	G	<4.0	200	3.8	100	2.9		G
14	(480)	4.4	200	3.9	100	2.8		(2.6)
15	480	4.3	200	3.8	100	2.8		(2.4)
16	480	4.2	210	3.7	100	2.8		2.6
17	400	4.4	200	3.6	100	2.6		2.8
18	380	4.5	220	3.5	100	2.4		2.8
19	340	4.3	220	3.4	100	2.3		3.0
20	300	4.5	220	3.3	110	2.2		3.0
21	280	4.1	230	3.0	110	2.0		3.0
22	260	4.0	230	2.9	110	1.8		3.1
23	260	4.4	240	2.8	120	1.9		3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 37

Baker Lake, Canada (64.3°N, 96.0°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.5			---	---	3.5	2.9
01	250	3.7			---	1.5	3.5	3.0
02	260	3.2			100	1.6	2.8	3.0
03	250	3.4			100	1.7	2.0	3.0
04	280	3.5	230	2.9	100	1.8	2.3	3.0
05	290	<3.6	210	3.1	100	2.0	2.4	3.0
06	310	3.8	200	3.4	100	2.3		3.0
07	400	4.0	200	3.6	100	2.5		2.7
08	460	(4.2)	200	3.8	100	2.8		(2.6)
09	440	4.4	200	3.9	100	3.0		2.6
10	480	(4.5)	200	4.0	100	3.0		(2.6)
11	460	4.6	200	4.0	100	3.2		2.6
12	470	4.7	200	4.0	100	3.3		2.7
13	420	4.8	200	4.0	100	3.1		2.7
14	400	5.0	200	4.0	100	3.0		2.8
15	390	5.0	200	4.0	100	2.9		2.8
16	380	5.0	200	3.9	100	2.9		2.9
17	370	5.0	200	3.8	100	2.8		2.9
18	340	4.8	200	3.6	100	2.5		2.9
19	310	4.5	210	3.3	100	2.2		2.9
20	280	4.4	220	3.0	100	2.0	2.4	3.0
21	250	4.2	---	---	100	1.8	2.8	3.0
22	250	3.8			100	1.8	3.9	3.0
23	240	3.8			100	1.6	3.8	3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 38

Reykjavik, Iceland (64.1°N, 21.8°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(295)	(3.8)					3.8	(3.0)
01	(295)	(3.5)					4.4	(2.9)
02	(305)	(3.6)					4.1	(2.8)
03	(290)	(3.4)			---	---	4.0	(3.1)
04	(280)	3.2	---	---	---	---	3.5	3.0
05	330	3.5	260	3.0	---	---		2.9
06	(340)	3.9	240	3.3	---	---		3.0
07	(340)	4.2	230	3.6	100	---		3.1
08	335	4.4	210	3.8	100	2.5		3.0
09	345	4.5	200	3.9	100	2.8		3.1
10	350	4.7	205	4.0	100	(2.8)		3.1
11	375	4.6	200	4.0	100	3.0		3.0
12	400	5.0	210	4.1	100	3.0		3.0
13	370	4.8	210	4.1	100	3.0		3.0
14	410	4.7	210	4.1	100	3.0		2.9
15	390	4.8	220	4.0	100	2.8		2.9
16	380	4.6	220	3.9	100	2.7		3.0
17	370	4.6	230	3.8	100	2.6		2.9
18	330	4.6	240	3.6	100	2.4	3.8	3.1
19	300	4.5	240	---	110	2.3	4.0	3.1
20	290	4.4	250	---	120	---	3.8	3.1
21	300	4.1	---	---	110	---	3.9	3.1
22	305	4.1	---	---	---	---	4.3	3.1
23	295	3.9			---	---	4.6	3.1

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 39

Churchill, Canada (58.8°N, 94.2°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	3.4			---	---	8.0	(2.8)
01	(270)	3.2			---	---	5.2	(3.0)
02	300	3.4			---	---	5.2	(3.0)
03	300	3.4			120	2.5	5.0	(3.0)
04	290	3.2	---	---	120	2.5	5.7	(3.0)
05	300	3.4	---	---	120	(2.6)	5.0	2.9
06	320	3.6	---	---	110	3.0	4.0	2.7
07	(450)	3.9	230	3.6	120	3.2	3.0	(2.2)
08	(410)	4.1	230	4.0	110	3.6	5.2	(2.6)
09	G	(4.4)	220	4.0	100	3.3	6.0	G
10	G	<4.0	210	4.0	120	3.1	4.8	G
11	G	<4.3	220	4.1	100	3.2		G
12	500	4.3	210	4.2	100	3.2		2.4
13	480	4.7	210	4.1	100	3.3		2.5
14	410	4.9	210	4.0	100	3.1		2.8
15	400	5.0	220	4.0	100	3.0		2.7
16	380	5.0	220	4.0	110	3.0		2.8
17	360	5.0	230	4.0	110	2.8		2.8
18	350	4.7	230	3.7	110	2.8		2.9
19	310	4.4	250	---	110	2.9	4.3	3.0
20	300	4.0	---	---	120	2.5	6.6	3.0
21	290	4.0			---	(2.4)	5.7	3.1
22	290	(4.0)			---	---	7.9	(3.0)
23	280	[illegible]					8.0	(3.0)

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 40

Fort Chimo, Canada (58.1°N, 68.3°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8			100	2.0	4.7	2.9
01	300	2.8			100	2.2	4.2	2.8
02	320	2.8			100	2.2	4.0	(2.7)
03	300	3.0			100	2.6	3.3	(2.8)
04	280	3.3	---	---	100	2.9	4.2	3.0
05	300	3.8	---	---	100	3.0	3.9	3.0
06	420	<4.0	200	3.8	100	3.0		2.6
07	440	(4.2)	210	3.9	100	3.2		2.6
08	G	<4.0	200	3.9	100	3.0		G
09	450	<4.0	200	4.0	100	3.0		2.5
10	G	<4.0	200	4.0	100	3.0		G
11	480	4.5	200	4.0	100	3.1		2.6
12	460	4.6	200	4.0	100	3.1		2.5
13	440	4.8	200	4.0	100	3.1		2.5
14	390	4.9	200	4.0	100	3.0		2.7
15	400	4.8	220	4.0	100	3.0		2.7
16	380	4.6	220	3.9	100	3.0		2.7
17	370	4.5	250	3.7	100	2.7		2.8
18	280	4.4	270	3.3	100	2.5	2.6	2.9
19	260	4.0			100	2.6	4.2	3.0
20	290	3.8			100	2.4	4.1	3.0
21	300	3.6			100	1.9	4.5	2.8
22	280	3.3			100	1.9	5.5	2.8
23	280	3.3			100	2.1	4.4	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 41

Prince Rupert, Canada (54.3°N, 130.3°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.7					1.8	2.8
01	320	2.7					2.0	2.8
02	320	2.4					2.0	2.6
03	310	2.4			---	---		2.7
04	300	2.4			---	E	2.0	2.8
05	290	3.0	250	2.5	140	1.5	1.8	2.7
06	410	3.6	230	3.2	110	2.1		2.6
07	490	4.0	220	3.4	100	2.4		2.5
08	480	4.2	210	3.7	100	2.7		2.4
09	510	4.2	200	3.9	100	2.8		2.3
10	490	4.4	200	4.0	100	3.0		2.5
11	480	4.5	200	4.0	100	3.0		2.6
12	450	4.7	200	4.1	100	3.1		2.5
13	500	4.7	200	4.2	100	3.2		2.5
14	460	4.8	210	4.1	100	3.1		2.5
15	410	4.8	210	4.1	100	3.1		2.6
16	400	4.6	210	4.0	100	3.0		2.6
17	380	4.7	220	3.9	100	2.8		2.7
18	320	4.8	220	3.7	100	2.4		2.9
19	280	4.8	240	---	110	2.0	2.5	3.0
20	260	4.3			---	E	3.0	2.9
21	270	4.4					2.3	2.9
22	280	3.8					2.2	2.8
23	270	3.0					2.0	2.8

Time: 120.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 42

Lindau/Harz, Germany (51.6°N, 10.1°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0					2.1	2.8
01	290	3.6					2.1	2.8
02	290	3.3					2.2	2.8
03	290	3.1					2.2	2.8
04	290	3.0	---	---	---	---	2.3	2.9
05	290	3.7	<250	2.7	120	1.6	2.9	3.0
06	310	4.4	230	3.4	110	2.0	3.2	3.0
07	370	4.6	230	3.8	100	2.4	3.1	2.9
08	405	4.7	220	4.0	100	2.7	3.5	2.8
09	400	4.8	210	4.2	100	2.9	4.3	2.9
10	400	5.1	210	4.2	100	3.0	3.9	2.9
11	415	5.2	210	4.4	100	3.2	3.8	2.8
12	390	5.5	220	4.4	100	3.2	3.9	2.8
13	370	5.4	220	4.4	100	3.2	4.2	2.9
14	345	5.5	220	4.4	100	3.2	3.9	3.0
15	345	5.5	220	4.3	100	3.0	4.0	3.0
16	330	5.6	220	4.2	100	2.9	4.2	3.0
17	305	5.8	230	3.9	100	2.6	3.8	3.0
18	290	5.6	235	3.7	105	2.3	3.7	3.0
19	270	6.0	250	---	130	1.8	3.4	3.1
20	250	6.0	---	---	---	E	2.5	3.1
21	240	5.9					2.2	3.0
22	240	5.4					2.2	3.0
23	270	4.6					2.0	2.9

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 43

Winnipeg, Canada (49.9°N, 97.4°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.7					4.0	2.8
01	320	2.8					4.4	2.8
02	320	2.5					3.4	2.8
03	320	2.5					4.3	2.8
04	320	2.5			---	---	4.0	2.8
05	270	3.0	---	---	120	1.8	2.5	3.1
06	440	3.5	240	3.2	120	2.1		2.8
07	580	<3.8	220	3.5	110	2.5		2.3
08	660	<4.0	220	3.8	110	2.8		---
09	640	4.2	210	4.0	110	3.0		2.2
10	510	4.4	200	4.0	110	3.2		2.4
11	550	4.5	200	4.1	110	3.1		2.6
12	460	4.5	200	4.1	110	3.2		2.6
13	480	4.6	210	4.2	110	3.2		2.7
14	480	4.6	210	4.1	110	3.1		2.7
15	430	4.9	220	4.1	110	3.1		2.8
16	400	5.0	220	4.0	110	2.9		2.8
17	380	4.9	220	3.9	110	2.7		2.9
18	340	4.8	230	3.6	110	2.4		3.0
19	300	5.0	240	3.5	120	2.0		3.0
20	280	4.8	---	---	---	---	2.6	3.0
21	260	4.1					2.6	3.0
22	290	3.5					2.8	3.0
23	300	3.1					3.1	2.9

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 44

St. John's, Newfoundland (47.6°N, 52.7°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9						2.8
01	300	2.8					2.3	2.8
02	300	2.5					3.0	2.8
03	300	2.4					2.3	2.6
04	260	3.0	---	---	---	---	1.6	3.0
05	250	3.5	250	3.2	120	2.1		3.1
06	360	<3.8	230	3.6	110	2.4		3.0
07	G	<4.0	210	3.9	110	2.7		G
08	540	4.3	210	4.0	110	3.0		2.5
09	G	<4.2	200	4.1	100	3.1		G
10	470	4.6	200	4.2	100	3.2		2.5
11	430	4.9	200	4.3	100	3.3		2.6
12	440	5.0	200	4.3	100	3.3		2.6
13	410	4.9	200	4.3	100	3.2		2.7
14	400	5.2	220	4.2	100	3.1		2.8
15	380	5.3	220	4.1	110	2.9		2.7
16	350	5.4	230	3.9	110	2.8		2.9
17	320	5.6	240	3.6	110	2.4		3.0
18	280	5.8	250	3.0	120	1.9	3.0	3.0
19	250	5.5			---	---		3.0
20	240	5.0						3.0
21	260	4.4						2.9
22	280	3.4						2.9
23	300	3.4						2.8

Time: 60.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 45

Ottawa, Canada (45.4°N, 75.7°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0						2.9
01	300	2.8					1.8	2.8
02	300	2.4					2.4	2.9
03	(330)	2.2					2.4	2.9
04	340	2.2						2.9
05	250	3.2			120	1.8	1.8	3.1
06	300	3.6	230	3.5	120	2.2		3.1
07	450	4.1	230	3.8	120	2.7	2.6	2.8
08	520	4.2	220	3.9	120	2.9		2.5
09	G	4.2	220	4.0	120	3.2		G
10	460	4.7	210	4.1	120	3.2	3.7	2.7
11	500	4.6	200	4.2	120	3.3	3.2	2.7
12	460	4.7	200	4.2	120	3.2		2.6
13	420	4.8	220	4.2	120	3.3		2.8
14	440	5.0	230	4.2	120	3.2		2.7
15	430	5.0	230	4.1	120	3.1		2.7
16	400	5.2	230	4.0	120	2.9		2.8
17	340	5.4	240	3.8	120	2.7		2.9
18	320	5.2	250	3.5	120	2.2	2.5	3.0
19	280	5.2	270	---	---	---		3.0
20	270	5.0						3.0
21	280	4.2						2.9
22	280	3.7						2.9
23	300	3.0						2.8

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 46

Wakkanai, Japan (45.4°N, 141.7°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	4.8					2.9	2.8
01	320	4.7					2.6	2.7
02	320	4.2						2.6
03	320	4.3						2.8
04	310	4.4					2.0	2.8
05	300	4.7					3.0	2.9
06	310	4.9	---	---	120	2.4	3.2	2.9
07	(310)	5.1	---	4.0	120	2.8	4.8	3.0
08	(410)	5.3	---	---	120	3.0	5.2	2.8
09	(380)	6.0	---	---	120	3.2	6.0	2.8
10	(400)	(5.4)	---	4.4	130	3.2	4.8	(2.8)
11	420	5.6	220	4.4	120	3.3	5.0	2.7
12	420	5.5	---	4.5	---	---	5.0	2.7
13	400	(6.0)	---	4.5	120	3.0	3.8	(2.7)
14	390	6.1	260	4.4	120	3.1	3.8	2.8
15	380	6.2	290	4.3	120	3.0	3.4	2.8
16	370	6.0	270	4.0	120	2.8		2.8
17	320	5.8	280	3.8	130	2.3	3.3	2.8
18	310	5.8					4.0	2.9
19	300	5.5					3.0	2.9
20	300	5.8					3.2	2.8
21	300	(5.3)					3.0	(2.9)
22	300	(5.5)					2.4	(2.7)
23	320	5.2					2.0	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 2 minutes.

Table 47

Akita, Japan (39.7°N, 140.1°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.8					2.6	2.9
01	290	4.8					2.4	2.9
02	270	4.7					3.0	2.9
03	270	4.5					2.4	2.9
04	260	4.3			---	---	2.2	3.0
05	240	4.8	---	---	120	1.8	2.4	3.1
06	260	5.5	230	3.6	110	2.3	3.6	3.2
07	260	5.4	240	4.0	110	2.7	5.0	3.2
08	290	5.7	230	4.2	110	3.0	5.6	3.3
09	300	5.7	220	4.4	110	3.1	6.0	3.2
10	320	5.8	220	4.5	110	3.2	5.6	3.1
11	340	5.8	230	4.5	110	3.3	5.2	3.0
12	360	6.4	220	4.6	110	3.3	5.6	2.8
13	340	6.7	230	4.6	110	3.3	5.7	2.9
14	310	7.2	220	4.4	110	3.2	5.2	3.0
15	300	7.4	240	4.4	110	3.0	4.8	3.1
16	280	7.0	240	4.0	110	2.8	4.8	3.2
17	280	6.8	230	3.7	110	2.5	5.0	3.2
18	270	6.1	250	3.4	120	2.0	4.6	3.1
19	270	6.6					4.3	3.1
20	260	6.5					4.8	3.1
21	270	6.1					4.0	3.1
22	280	5.4					3.6	3.0
23	270	5.4					3.0	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 48

Tokyo, Japan (35.7°N, 139.5°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.1					4.2	2.7
01	300	5.1					3.8	2.7
02	280	4.9					3.1	2.8
03	290	4.6					2.8	2.8
04	270	4.4					2.9	2.8
05	250	4.9	---	---	140	1.5	2.9	3.2
06	270	5.7	250	---	120	2.2	3.7	3.3
07	270	5.8	250	4.0	110	2.6	4.9	3.2
08	300	5.9	260	4.4	110	3.0	5.6	3.2
09	350	6.1	240	4.4	110	3.2	6.0	3.0
10	350	5.9	220	4.5	110	3.2	6.5	2.9
11	360	6.1	200	4.6	110	3.3	6.5	2.8
12	380	6.4	220	4.6	110	3.3	5.7	2.7
13	350	7.4	220	4.5	110	3.2	5.4	2.9
14	320	7.6	230	4.4	110	3.2	5.1	2.9
15	300	7.8	240	4.3	110	3.1	4.9	2.9
16	300	7.9	240	4.1	110	2.8	4.6	3.0
17	290	7.0	240	3.7	110	2.4	5.4	3.0
18	290	6.8	250	---	120	1.7	4.9	2.9
19	260	7.4					4.4	2.9
20	260	7.0					4.5	2.9
21	280	6.4					4.8	2.8
22	280	5.9					4.5	2.7
23	300	5.8					4.2	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 49

Yamagawa, Japan (31.2°N, 130.6°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.8					4.4	2.8
01	290	5.2					3.5	2.9
02	260	5.6					3.5	3.0
03	250	4.5					3.1	3.0
04	260	4.1					2.7	3.0
05	250	4.4					2.5	3.1
06	250	5.4	---	---	130	1.8	3.1	3.4
07	240	6.1	230	---	110	2.5	4.0	3.4
08	290	6.1	220	---	100	2.8	5.0	3.2
09	290	6.2	240	4.4	100	3.0	5.0	3.2
10	330	6.3	230	4.7	100	3.2	5.2	3.1
11	350	7.1	230	4.8	100	3.3	6.0	2.9
12	350	7.3	240	5.0	100	3.2	5.0	2.9
13	330	8.6	240	4.8	100	3.3	5.0	2.9
14	300	9.2	220	4.6	100	3.2	4.6	3.0
15	300	9.0	220	4.5	100	3.2	4.5	3.1
16	290	8.3	240	4.2	100	3.0	4.8	3.2
17	280	8.4	240	4.0	100	2.6	4.7	3.2
18	260	8.6	240	---	110	2.1	5.2	3.1
19	250	8.4					4.7	3.2
20	240	7.5					4.5	3.2
21	250	6.0					4.5	3.0
22	300	5.6					4.5	2.8
23	300	5.8					4.4	2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 2 minutes.

Table 50

Guam I. (13.6°N, 144.9°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	5.1					2.7	2.7
01	320	5.5						2.8
02	300	4.4						2.9
03	280	4.8						3.2
04	260	4.5						3.3
05	240	3.8						3.3
06	250	4.4					2.0	3.3
07	250	6.1	230	---	120	2.3	2.8	3.3
08	280	6.8	230	---	110	2.6	5.3	3.1
09	320	7.2	230	4.4	110	3.0	6.0	2.9
10	360	7.4	230	4.6	110	3.2	4.1	2.6
11	370	8.0	220	4.5	110	3.3		2.5
12	380	8.6	220	4.5	110	3.3		2.5
13	380	9.0	200	4.5	120	3.4	5.6	2.5
14	370	9.2	220	4.5	110	3.4	4.7	2.6
15	360	9.6	220	4.4	110	3.2	4.5	2.6
16	340	9.6	220	4.3	110	2.9	5.1	2.6
17	320	10.0	240	---	120	2.5	4.6	2.6
18	270	10.6	250	---	---	---	4.6	2.7
19	260	10.1					3.7	2.9
20	260	8.9					3.2	2.8
21	280	7.8					3.0	2.7
22	320	6.6					3.1	2.7
23	360	5.4					1.7	2.7

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 51

Huancayo, Peru (12.0°S, 75.3°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	5.4						3.3
01	230	4.8						3.4
02	230	4.5						3.4
03	240	3.7						3.3
04	250	3.2						3.2
05	260	2.8						3.2
06	280	3.2			---	E		3.0
07	240	6.0	240	---	120	2.2	7.0	3.2
08	(270)	7.5	220	---	110	2.7	8.2	3.0
09	300	8.0	210	4.3	110	---	10.0	2.7
10	330	7.8	200	4.4	110	---	10.5	2.6
11	350	7.5	200	4.5	110	---	10.6	2.6
12	360	7.1	200	4.4	110	---	10.3	2.6
13	360	7.3	200	4.4	110	---	10.4	2.6
14	360	7.4	190	4.3	110	---	10.0	2.6
15	(310)	7.6	200	4.2	110	---	9.6	2.6
16	(270)	7.8	210	---	110	---	8.8	2.7
17	240	8.0			110	2.0	5.9	2.7
18	270	7.5			---	---		2.8
19	290	7.1						2.8
20	280	7.0						2.8
21	260	6.9						3.1
22	230	6.3						3.2
23	230	6.0						3.3

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 52

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.8						3.0
01	260	3.0						3.1
02	250	3.0						3.1
03	260	3.0						3.0
04	240	3.0					2.0	3.2
05	250	2.8					1.8	3.0
06	240	2.8						3.2
07	220	5.0			---	1.8		3.6
08	230	6.1	220	3.1	110	2.4		3.6
09	240	6.8	220	4.0	110	2.8		3.4
10	260	7.6	210	4.2	110	3.0		3.3
11	260	7.8	210	4.4	110	3.2	3.7	3.3
12	260	7.6	200	4.4	110	3.2	3.5	3.3
13	270	7.5	200	4.4	110	3.2		3.2
14	270	7.9	200	4.3	110	3.1	3.6	3.2
15	250	8.2	200	---	110	2.9	3.6	3.3
16	240	7.2	220	---	110	2.6	3.0	3.4
17	220	6.4	---	---	110	2.0	1.9	3.4
18	210	5.3					1.4	3.4
19	220	3.7						3.3
20	240	3.4						3.2
21	230	3.4						3.3
22	230	3.1						3.2
23	240	3.0						3.2

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 53

Capetown, Union of S. Africa (34.2°S, 18.3°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.7						3.1
01	270	2.7						3.0
02	260	2.6						3.0
03	270	2.8						3.0
04	270	2.9						3.0
05	250	2.9						3.1
06	250	2.9						3.1
07	240	2.8						3.2
08	220	5.0	---	---	---	1.9		3.5
09	230	6.0	220	---	110	2.4		3.5
10	250	6.6	220	4.0	110	2.8		3.4
11	250	6.7	220	4.2	110	3.0	3.2	3.4
12	260	7.4	210	4.2	110	3.1		3.3
13	260	7.7	210	4.2	110	3.1	3.4	3.2
14	260	8.4	220	4.1	110	3.0	3.6	3.2
15	260	8.2	220	4.0	110	2.9	3.4	3.3
16	240	7.8	220	3.7	120	2.6	3.0	3.4
17	230	6.8	220	2.6	120	2.1	2.6	3.4
18	220	5.7			---	---		3.4
19	220	3.6						3.3
20	240	3.3					1.7	3.2
21	230	3.0						3.3
22	230	2.8						3.3
23	250	2.6						3.1

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 54

Fort Chimo, Canada (58.1°N, 68.3°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0			100	2.7	4.0	(2.8)
01	310	2.9			100	2.4	4.0	2.9
02	(310)	2.8			100	2.2	4.0	(2.8)
03	(340)	3.0			100	2.7	3.6	---
04	340	<3.2	---	---	100	2.8	3.4	(2.9)
05	370	3.5	---	---	100	2.7	4.8	G
06	G	3.6	280	3.6	100	3.0	3.9	G
07	G	<3.9	230	3.8	100	3.0	3.5	G
08	G	<3.8	230	3.8	100	3.0		G
09	600	<4.0	200	3.9	100	3.0		G
10	540	4.1	220	3.9	100	3.0		2.4
11	500	4.3	210	3.9	100	3.1		2.5
12	450	4.6	220	4.0	100	3.0		2.6
13	450	4.5	210	3.9	100	3.0		2.6
14	420	4.5	220	3.9	100	3.0		2.6
15	400	4.3	220	3.8	100	2.9		2.7
16	370	4.5	250	3.7	100	2.8		2.8
17	300	4.3	240	3.4	100	2.6		2.9
18	280	4.1	---	---	100	2.7		3.0
19	290	3.8	---	---	100	2.3	4.5	2.9
20	260	3.5			---	---	5.0	2.8
21	250	3.2			---	---	4.8	2.9
22	270	3.2			---	---	4.1	(3.0)
23	270	2.8			---	2.9	4.6	(3.0)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 55

Guam I. (13.6°N, 144.9°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.4						2.8
01	280	7.6						3.0
02	250	6.8						3.2
03	250	4.6						3.2
04	250	4.1						3.2
05	250	3.1						3.2
06	260	3.5					2.2	3.1
07	240	6.5			---	---		3.4
08	260	7.7	230	---	120	---		3.2
09	290	8.8	230	---	---	---		2.9
10	320	9.2	220	4.6	110	---		2.6
11	320	9.4	(200)	4.7	---	---		2.4
12	330	9.5	---	(4.7)	---	---		2.4
13	330	10.1	---	4.6	---	---		2.5
14	320	10.6	---	---	---	---		2.6
15	310	11.2	240	4.5	---	---		2.7
16	300	11.8	240	---	---	---		2.8
17	280	12.3	240	---	120	---	2.8	2.9
18	260	12.8			---	---	2.7	3.0
19	250	12.1					3.2	3.0
20	260	10.1					2.4	2.8
21	280	9.1						2.8
22	280	8.8						2.8
23	290	8.0						2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 56

Townsville, Australia (19.3°S, 146.8°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.0					2.6	3.2
01	240	3.7					2.7	3.0
02	250	3.8					2.6	3.1
03	220	4.0					3.4	3.3
04	240	2.9					3.7	3.0
05	270	2.8					3.3	2.9
06	250	2.9					3.5	3.1
07	210	6.2			120	2.1	3.5	3.5
08	230	7.8	210	3.8	100	2.5	4.0	3.5
09	240	8.5	200	4.2	100	2.9	4.4	3.4
10	250	9.0	210	4.3	100	3.2	4.8	3.3
11	240	9.4	200	4.4	100	3.3	5.5	3.4
12	240	8.4	200	4.4	100	3.3	5.0	3.4
13	260	8.7	200	4.4	100	3.2	5.8	3.2
14	250	9.3	200	4.4	100	3.3	5.6	3.2
15	245	9.3	200	4.0	100	3.0	4.8	3.3
16	240	9.4	210	3.8	100	2.7	5.2	3.3
17	220	8.0	---	---	---	---	4.3	3.4
18	205	7.5					3.7	3.3
19	220	5.8					3.5	3.2
20	250	5.0					3.0	3.1
21	250	4.0					2.6	3.0
22	260	4.2					2.7	3.0
23	250	4.4					3.5	3.1

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 57

Rarotonga I. (21.3°S, 159.8°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.7					2.6	2.9
01	300	4.4						2.9
02	300	4.0						2.9
03	260	4.2					2.7	2.8
04	270	3.9					3.0	2.9
05	300	4.0						2.9
06	300	3.4					2.8	2.9
07	250	7.1	---	2.1	---	1.8	3.0	3.2
08	250	8.6	240	3.6	110	2.6	3.6	3.3
09	250	9.2	240	4.2	110	3.0	3.4	3.3
10	260	10.3	230	4.5	110	3.3	4.0	3.3
11	260	10.9	210	4.6	110	3.4	3.7	3.3
12	260	10.0	230	4.7	110	3.5	4.6	3.2
13	290	9.5	230	4.8	110	3.5	4.5	3.1
14	290	10.6	230	4.8	110	3.4	5.0	3.1
15	270	11.5	---	4.2	110	3.2	5.6	3.1
16	260	10.5	250	---	110	2.8	6.0	3.1
17	260	9.4			---	---	5.9	3.1
18	250	8.8					5.2	3.1
19	250	7.7					4.8	3.1
20	260	6.3					4.6	2.9
21	300	6.2					4.1	2.9
22	260	6.2					3.3	3.0
23	260	5.8					3.2	3.0

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 58

Brisbane, Australia (27.5°S, 153.0°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.4					3.8	3.0
01	260	4.4					3.6	3.0
02	250	4.4					3.6	3.1
03	240	4.4					3.0	3.3
04	230	3.8					2.8	3.3
05	230	3.0						3.1
06	240	4.0						3.2
07	220	6.0	---	---	120	2.4		3.4
08	240	7.4	230	4.2	110	2.8		3.4
09	250	8.3	225	4.4	100	3.0		3.4
10	250	9.0	210	4.5	100	3.2	2.9	3.4
11	255	8.4	220	4.6	100	3.3		3.4
12	270	7.8	210	4.7	100	3.3		3.2
13	270	9.0	230	4.7	100	3.3	3.0	3.2
14	260	>9.0	240	4.5	110	3.2		3.2
15	250	>9.0	225	4.2	115	3.0	2.7	3.3
16	230	8.4	230	3.6	120	2.6	3.0	3.3
17	220	7.5			---	E	2.9	3.3
18	230	6.0					3.0	3.2
19	250	5.2					2.8	3.0
20	260	4.9					3.1	3.0
21	260	4.9					3.0	3.0
22	260	4.8					3.8	3.0
23	260	4.6					3.8	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 59

Hobart, Tasmania (42.8°S, 147.4°E) April 1952*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.0					2.4	3.0
01	260	2.7					3.0	3.0
02	270	2.7					2.7	2.9
03	290	2.5					2.8	3.0
04	265	2.2					2.1	3.0
05	270	2.2					2.6	3.0
06	270	2.0						3.0
07	235	3.8			---	---	3.0	3.2
08	230	5.0			110	2.2	3.0	3.3
09	220	6.0	---	---	100	2.7	3.0	3.2
10	250	6.5	200	4.3	100	3.0	3.2	3.2
11	250	7.0	200	4.4	100	3.0	3.1	3.2
12	250	7.6	200	4.4	100	3.1		3.2
13	250	7.6	200	4.4	100	3.1		3.2
14	230	7.2	205	4.2	100	3.0		3.2
15	230	7.3	---	---	100	2.8		3.2
16	230	7.2			100	2.4	3.0	3.2
17	220	7.0			120	1.9	3.0	3.2
18	220	6.3					2.6	3.1
19	220	5.4					2.2	3.1
20	220	4.5					2.6	3.1
21	250	3.8					3.0	3.0
22	250	3.4					3.0	3.0
23	250	3.1					2.2	2.9

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.
*No record April 1 through April 7.

Table 60

Christchurch, New Zealand (43.6°S, 172.7°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.4					3.0	3.0
01	280	3.1					2.8	2.9
02	280	3.0					3.3	3.0
03	280	2.5					3.0	3.1
04	260	2.2					3.2	3.0
05	250	1.8					3.2	3.2
06	290	2.0				---	3.5	3.1
07	250	4.0				1.5	3.2	3.3
08	250	5.2	250	3.5		2.2	3.5	3.3
09	260	5.7	240	3.9		2.5	3.2	3.4
10	280	6.2	220	4.1		2.7	3.7	3.2
11	270	7.0	230	4.2		2.8	3.6	3.3
12	270	7.2	220	4.2		2.9	4.4	3.2
13	270	7.4	240	4.2		2.9	4.1	3.3
14	270	7.2	240	4.0		[illegible]	4.4	3.2
15	260	6.9	240	3.8		2.6	3.5	3.3
16	250	6.9	250	3.3		2.2	3.4	3.2
17	250	6.6	---	---		1.6	3.1	3.2
18	240	6.1				---	3.0	3.1
19	250	5.8					3.2	3.0
20	260	5.1					3.5	2.9
21	260	4.6					3.3	2.9
22	280	4.0					2.8	2.9
23	290	3.6					2.8	2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 61*

Inverness, Scotland (57.4°N, 4.2°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	(2.2)					1.7	(2.6)
01	335	(2.2)					2.4	(2.7)
02	340	(2.0)					2.3	(2.7)
03	345	(1.8)					2.4	(2.4)
04	320	(1.6)					1.6	(2.5)
05	310	(1.8)					1.1	(2.7)
06	295	(2.3)			135	1.5		(2.9)
07	260	3.2			130	1.9		3.1
08	260	3.8	225	3.4	120	2.2		3.1
09	345	4.3	220	3.5	115	2.5		3.1
10	360	4.5	220	3.7	115	2.6		3.0
11	350	4.8	220	3.9	115	2.8		3.0
12	355	5.1	225	3.9	115	2.9		3.0
13	355	5.4	220	4.0	115	2.9		3.1
14	340	5.6	225	3.9	115	2.8		3.1
15	315	5.4	230	3.8	120	2.7		3.1
16	290	5.2	240	3.5	130	2.5		3.1
17	265	5.6	250		135	2.2		3.1
18	260	5.1	(250)		150	1.8		3.2
19	265	4.8						3.1
20	300	4.2						3.1
21	305	(2.6)						(2.9)
22	320	(2.4)						(2.9)
23	335	(2.2)						(2.7)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 62*

Slough, England (51.5°N, 0.6°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	2.6					2.3	2.6
01	320	2.7					2.9	2.6
02	315	2.5					3.2	2.6
03	315	2.2					3.0	2.6
04	300	2.2					3.2	2.7
05	310	2.0					3.8	2.8
06	285	2.6			150	1.7	4.1	3.0
07	260	3.7	245	3.2	130	2.0	3.8	3.2
08	310	4.4	230	3.6	125	2.3	3.9	3.2
09	335	4.8	225	3.8	120	2.5	4.2	3.2
10	335	5.6	220	4.0	120	2.8	4.3	3.0
11	335	5.7	215	4.1	115	2.9	4.2	3.2
12	330	5.8	215	4.2	115	3.0	4.5	3.0
13	315	5.7	225	4.2	115	3.0	4.4	3.1
14	300	6.0	225	4.1	120	2.9	4.2	3.2
15	290	6.0	230	3.9	120	2.7	4.0	3.2
16	280	5.6	235	3.7	120	2.4	3.9	3.2
17	260	5.8	240	3.4	130	2.1	3.1	3.2
18	250	6.0			145	1.8	2.4	3.2
19	240	5.6						3.0
20	250	4.5						3.0
21	270	3.5						2.9
22	305	2.8						2.8
23	330	2.4					2.3	2.6

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 63*

Singapore, British Malaya (1.3°N, 103.8°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	5.8						3.2
01	230	4.4					1.7	2.9
02	260	4.2					1.7	2.9
03	265	4.0					2.2	3.0
04	260	3.4					3.0	3.0
05	255	3.1					3.2	3.2
06	255	3.2					3.2	3.0
07	245	6.8			(130)	2.2	3.4	3.2
08	(280)	8.2	230		120	2.8	5.3	2.9
09	310	9.3	220		110	3.2	4.6	2.6
10	320	10.3	215	(4.6)	110	3.4	4.4	2.4
11	325	10.2	205	4.7	110	3.5		(2.3)
12	340	9.7	205	4.7	110	3.6	5.0	---
13	330	9.8	205	4.7	110	3.6	5.0	(2.5)
14	310	10.4	205	(4.7)	110	3.5	5.2	2.6
15	315	10.7	210		110	3.3	4.6	2.6
16	300	10.8	230		110	2.9	3.4	2.6
17	285	11.2	245		120	2.4	3.3	2.6
18	260	11.0				1.7	3.0	2.6
19	290	11.1					3.0	2.6
20	280	11.1					3.1	2.7
21	250	11.2					3.0	3.0
22	225	10.8					2.9	3.2
23	210	9.6					1.6	3.3

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 64

Canberra, Australia (35.3°S, 149.0°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	4.1					3.5	3.0
01	250	4.0					3.3	3.0
02	250	3.8					2.8	3.1
03	240	3.6					2.7	3.1
04	<240	3.1					2.3	3.1
05	240	2.6						3.0
06	240	3.2			(130)	(1.5)		3.2
07	220	4.7	210	---	100	2.1		3.5
08	310	5.5	210	3.8	100	2.6		3.4
09	290	5.8	200	4.2	100	3.0	3.4	3.4
10	290	6.4	200	4.3	100	3.1	3.6	3.3
11	290	6.6	190	4.3	100	3.2	3.6	3.3
12	280	7.0	200	4.4	100	3.3		3.3
13	280	7.4	200	4.3	100	3.2		3.3
14	270	6.6	205	4.3	100	3.2		3.4
15	260	6.5	210	4.3	100	3.1		3.4
16	260	6.6	220	4.0	100	2.8		3.3
17	245	6.1	230	---	100	2.3	2.4	3.3
18	225	6.4			110	(1.8)	2.8	3.4
19	220	5.8			---	---	2.8	3.3
20	230	5.0					2.6	3.2
21	240	4.5					2.8	3.1
22	250	4.2					3.2	3.0
23	280	4.2					3.4	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 65*

Falkland Is. (51.7°S, 57.8°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	5.6					2.5	2.7
01	300	5.4					2.7	2.7
02	290	5.0					2.6	2.7
03	310	4.8					1.8	2.7
04	300	4.7						2.6
05	300	4.3	300	2.8				2.7
06	300	5.3	250	3.3	140	2.1	2.8	2.9
07	340	5.6	250	3.7	130	2.4	3.2	2.9
08	350	5.9	240	4.0	120	2.7	4.6	2.8
09	360	6.2	230	4.3	110	3.0	4.7	2.9
10	350	6.5	240	4.5	110	3.1	4.8	2.8
11	330	6.8	240	4.6	110	3.2	4.8	2.9
12	320	7.5	240	4.6	110	3.2	4.6	3.0
13	320	7.1	230	4.6	110	3.2	4.7	3.0
14	310	6.9	230	4.5	110	3.2	3.8	3.0
15	310	6.8	230	4.4	120	3.1	4.0	3.1
16	290	6.6	240	4.2	120	2.9	3.7	3.2
17	280	6.7	240	3.9	120	2.6	3.6	3.2
18	250	6.2	250		120	2.2	4.4	3.2
19	260	6.1					4.8	3.2
20	270	6.0					3.8	2.9
21	300	6.1					3.6	2.7
22	300	5.9					2.9	2.6
23	310	5.8					2.5	2.7

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 66*

Ibadan, Nigeria (7.4°N, 4.0°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	245	8.0					1.4	3.2
01	250	7.5						3.1
02	255	(6.0)						3.0
03	245	(5.5)						3.2
04	235	4.8						3.2
05	225	(3.1)						3.4
06	260	(4.8)	275#	1.4#	145	1.4	1.2	3.0
07	245	7.4	240		120	2.3	3.8	3.2
08	290#	8.7	225		120	2.9	6.6	2.8
09		9.0	215		115	3.3	9.6	2.6
10	355	8.6	205	4.9#	115	3.5	10.9	2.4
11	370	8.4	205	4.9	115	3.6	11.2	2.4
12	355	8.6	200	4.8	110	3.6	13.6	2.5
13	360	8.8	195	4.7	115	3.6	13.2	2.5
14	345#	8.8	205		115	3.5	12.3	2.5
15	335#	9.1	220		120	3.2	8.2	2.4
16		9.3	230		120	2.8	7.7	2.4
17	255	9.5	245		130	2.2	6.4	2.6
18	280	8.8			165	1.2	2.3	2.5
19	320	8.2						2.4
20	305	9.2					1.2	2.6
21	255	8.9						2.8
22	250	7.9						3.0
23	250	7.6						3.0

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 67

Tananarive, Madagascar (18.8°S, 47.8°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.9					3.0	3.0
01	242	5.1					2.2	3.0
02	260	4.2					2.4	2.9
03	280	3.9					2.3	2.8
04	265	3.6					2.4	3.1
05	270	3.0					2.5	2.9
06	255	4.4			125	1.9	3.0	3.1
07	(240)	5.5	230	---	111	2.6	4.6	3.1
08	350	6.4	225	4.5	109	3.0	4.6	2.9
09	348	7.4	230	4.7	109	3.4	4.5	2.9
10	360	8.4	210	4.8	109	3.6	4.2	2.8
11	350	8.7	220	4.9	111	3.7	4.0	2.8
12	348	9.4	220	4.9	111	3.8	4.0	2.8
13	340	9.6	210	4.8	111	3.7	4.0	2.9
14	330	9.8	222	4.8	111	3.6	4.0	2.9
15	300	10.0	230	4.6	111	3.4	4.3	3.0
16	290	9.1	220	4.5	109	3.1	3.9	3.1
17	282	8.2	220	(4.0)	113	2.8	3.7	3.1
18	255	7.5	240	---	121	2.1	3.3	3.2
19	260	6.8					3.2	3.0
20	270	6.8					3.0	3.0
21	268	6.7					3.1	3.0
22	270	6.2					2.7	2.9
23	280	5.7					3.0	2.8

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 68

Guam I. (13.6°N, 144.9°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	5.8						3.1
01	250	5.5						3.2
02	250	5.2						3.3
03	230	4.4						3.4
04	250	3.2						3.2
05	270	2.7						3.1
06	260	2.5			---	---		3.0
07	250	5.8			---	---		3.3
08	260	8.1	240	---	120	(2.6)		3.2
09	280	10.3	220	---	120	2.9		3.2
10	290	10.9	220	4.6	110	(3.1)		2.9
11	290	10.6	210	4.7	110	(3.3)	3.9	2.7
12	290	9.7	200	4.6	110	---	3.2	2.5
13	310	9.8	200	(4.6)	---	---	3.6	2.6
14	300	10.2	220	(4.5)	---	---		2.7
15	290	10.8	230	---	(120)	---		2.8
16	280	11.5	230	---	120	2.9		3.0
17	250	12.0	---	---	120	2.4		3.1
18	240	11.2					2.6	3.2
19	230	10.1						3.2
20	230	9.2						3.1
21	240	8.8					3.0	3.1
22	230	7.4					2.4	3.2
23	230	6.3						3.2

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 69

Djibouti, French Somaliland (11.5°N, 43.1°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	8.1					3.5	3.3
01	225	7.4					2.9	3.4
02	215	7.1					2.9	3.5
03	218	5.8					2.2	3.5
04	210	4.5						3.7
05	220	4.1						3.5
06	238	4.1			---	E	3.1	3.3
07	220	6.9	---	---	111	2.2	3.3	3.4
08	220	8.9	210	---	107	2.8	4.0	3.2
09	260	9.9	202	---	105	3.0	6.4	3.0
10	290	>10.0	195	5.4	105	3.4	6.8	2.8
11	310	10.0	200	5.4	105	3.5	6.8	2.8
12	300	>10.0	200	5.2	103	3.6	6.7	2.8
13	305	10.8	200	5.0	105	3.6	6.8	2.9
14	305	11.2	200	5.0	107	3.4	6.2	2.8
15	285	11.6	210	---	105	3.2	6.7	2.8
16	235	11.0	222	---	107	2.8	6.3	2.8
17	235	10.9			107	2.3	5.0	(3.0)
18	240	>10.0			---	E	3.7	2.9
19	262	9.2					3.1	(2.7)
20	270	8.6					3.0	(2.6)
21	268	8.5					3.2	(3.0)
22	248	8.2					3.0	3.3
23	235	8.0					3.3	(3.2)

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Form adopted June 1946

TABLE 70

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W., A.C.K.

Calculated by: McC., E.J.W.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	280	270	280	250	280	280	300	(300)L	460	480	660	400H	400	440	390H	390	380H	330	270	250	240	270	260	270
2	240	220	270	260	300	270	(370)L	G	540	(480)A	[460]A	440H	440	[410]A	450	430	360	310	320	250	230	(260)A	280	(290)A
3	(280)A	(300)AK	A K	A K	(330)AK	300K	G K	430K	G K	G K	G K	A K	520K	580K	G K	G K	400K	370K	L K	L K	(270)AK	(270)AK	240K	210K
4	260K	280K	300K	300K	310K	300K	250K	460K	G K	400K	480K	G K	G K	540K	460K	430HK	360K	400K	320K	270K	(250)A	250	250	230
5	250	270	270	270	300	280	[330]L	380H	430	330	320	380H	340	400H	370	350H	350	340	330	(270)A	(270)A	(290)A	280	270
6	240	280	270	290	340	(310)H	(320)L	510	(460)A	500	[520]A	530	490	460	(480)A	500H	420	330H	(300)L	270	250	260	(280)A	260
7	270	280	250	290	310	290	(300)L	400	440H	[460]A	490	410	G	G	500	430H	440	340	320	280	250	250	260	270
8	240	300	300	290	270	250	(250)L	350	350H	330	360	360	370	420	390	370	370	320	270	250	250	(270)A	(300)A	(290)A
9	(260)A	250	250	250	240	240	260	(270)L	310	290	310	340	370	330	370	360	340	320	280	270	250	230	230	250
10	270	280	280	280	250	300	(270)L	600	420	380	500	420		450	440	380	400	360	320	270	250	240	250	280
11	290	250	(300)A	300	280	300	260	(450)A	420K	650K	(560)SK	(460)AK	G K	G K	610K	470K	420K	330K	[300]AK	260	260	250	220H	250
12	280	300	[300]A	290	300	280	250	500	400	[420]N	430	430	360	390	380	370	(370)A	C	C	C	250	(280)A	(270)A	270
13	280	290	290	270	(270)A	270	270	390	430	400	420	370	420	470	370	350	340	330	270	250	250	(270)A	260	270
14	270	270	250	250	270	270	250	(300)L	300	(290)A	330	370	370	340	340	340	300	300	270	230	220	230	240	240
15	250	250	250	220	250	230	250	250	270	320	300	310	390	350H	390H	360	360	310	270	230	220	250	250	270
16	280	260	250	250	230	240	230	250	270	280	280	300H	340	350	320	330	300	290	[270]A	(250)A	220	210	210	210
17	250	270	300	(310)H	330	320	240	600	310	410	300	440H	370	450H	400H	400	320	(280)L	270	(250)A	240	240	270	270
18	250	280	280	280	280	310	(270)L	300	370	330H	370	310	390	380H	330	330	280	270	290K	200K	200K	200K	250K	[260]AK
19	270K	300K	A K	A K	A K	S K	250K	500K	460K	350K	730K	670K	G K	490K	390K	380K	400K	370K	310K	270K	240	240	240	240
20	250	300	290	300	280	270	280	L	L	370	300	360	350H	370H	390	350	340	360	290	250	240	240	240	270
21	(280)S	(290)S	310	300	260	280	250	(350)L	330	300	340	330	380	340	320	320	290	310	280	240	220	220	230	(250)S
22	(270)S	(290)S	(270)S	(290)S	300	(270)S	[280]L	280	280	360	330	400	410	470	360	370	350	310	280	240H	250	240	250	250
23	240	280	(300)A	290	290	(290)S	250	(450)L	440	360	380	440	410H	520	350	340	350	330	280	240	230	250	260	270
24	270	270	260	260	270	270	250	270	270	290H	310	320	350	320	310	310	300	270	260	250	240	240	250	250
25	270	260	260	270	280	280	250	250	260	300	280	330	310	300	300	290	280	270	250	250	230	240	250	270
26	260	260	240	240	260	270	250	270	270	270	270	290	300H	330	320	310	320	280	260	220	220	240	250	280
27	270	250	230	240	280	280	(280)L	310	260	300	(410)L	340	330	360	340	350	300	280	260	240	240	250	250	260
28	270	260	250	250	260	240	250	(250)L	260	270	270	300	290	340	300	300	280	260	250	230	210	220	250	250
29	260	260	260	230	240	260	(250)L	250	260	270	300	360	360	350	330	310	300	310	290	240	230	260	250	(280)S
30	300	330	(320)S	300	280	280	250	350K	450K	590K	440K	G K	G K	500K	420K	430K	370K	330K	280K	250K	230	A	A	300
31	(290)S	300	280	270	280	310	(240)A	250	280	260	280	330	330	310	[310]C	310	300	300	250	250	240	(230)S	250	(280)S
Median	270	280	270	270	280	280	250	350	360	350	360	370	380	400	370	360	350	320	280	250	240	240	250	270
Count	31	31	29	29	30	30	31	30	30	31	31	30	31	31	31	31	31	30	29	29	31	30	30	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 71

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W., A.C.K.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.8 F	3.2 F	(2.9) F	(2.7) F	(2.5) F S	3.0 F S	(3.9) S	3.7	4.2	4.5	4.4	4.8 H	(4.9) P A	4.8	5.6 H	4.9	5.2 H	5.2	5.5	4.9	5.0	4.7	4.4	4.2
2	3.9	3.1	2.8	(2.4) S	2.1	2.4	3.5	<3.8 G	(4.2) A	4.4	[4.7] A	4.8 H	5.0	[5.0] A	4.9	5.0	5.0	5.3	5.2	5.6	5.3	4.1	3.5	3.4
3	3.4	2.8 G	A K	A K	1.7 F K	(2.3) F K	<3.0 G K	3.9 K	<3.7 G K	<3.8 G K	<4.0 G K	[4.3] A K	4.5 K	4.5 K	<4.2 G K	<4.0 G K	4.6 K	4.3 K	4.2 K	4.1 K	4.8 K	4.7 K	4.2 K	3.0 K
4	2.5 F K	(2.0) F K	(1.8) F K	(1.8) F K	2.0 F K	2.3 F K	3.2 K	3.9 K	<3.9 G K	4.4 K	4.5 K	<4.2 G K	<4.3 G K	4.7 K	4.6 K	4.6 H K	4.9 K	4.7 K	5.0 K	5.1 K	5.4	5.1	4.8	4.5 F
5	3.1	3.2 F	2.8 F	2.7 F	2.2 F	2.5 F	3.6	4.3 H	4.6	5.3	5.5	5.2 H	5.7	5.5 H	5.5	5.7 H	5.4	4.9	5.3	5.8	6.2	5.6	5.1	4.9
6	4.1	3.5	2.9	2.2 F	1.8	2.2	3.7 H	4.1	(4.5) A	4.5	[4.6] A	4.6	4.9	4.9	(4.6) A S	4.7 H	5.6	5.2 H	4.8	5.2	5.3	4.7	4.2	4.0
7	3.8	3.3 F	2.7 F	2.2 F	2.0	2.4	3.5	4.3	4.6 H	(4.5) A	4.7	4.7 H	<4.5 G	<4.3 G	4.7	4.7 H	4.7	4.7	4.7	4.9	5.4 F	4.8	(4.0) A F	3.6 F
8	(2.4) F	2.5 F	(2.5) F	(2.4) F	(2.5) F	2.7 F	3.5	4.4	(4.8) H	5.4	5.5	5.4	5.3	5.2	5.1	5.3	5.3	5.6	5.4	5.1	5.2	4.8	3.8 F	(3.7) S F
9	3.6 F	3.1 F	2.9 F	2.6 F	2.5 F	2.7 F	4.5	4.8	5.9	6.0	5.9	5.8	5.6	5.8	5.7	5.8	6.3	5.8	5.8	6.6	7.2	6.1	4.7	4.1
10	3.6	3.5	3.1	2.9	2.7	2.4	3.5 V	3.7	4.4	4.8	4.6	5.0	4.9	4.8	4.8	5.0	4.8	4.9	4.7	4.9	(5.4) F	4.5	3.7	3.2
11	3.2	3.0	2.6 F	2.4	2.3	2.3	3.1	(3.9) A	4.3 K	4.3 K	(4.5) S K	K (4.6) A J	<4.3 G K	<4.3 G K	(4.5) A K	4.6 K	4.8 K	5.2 K	[5.2] A K	5.8	5.6	4.8	3.8 H	3.6
12	2.7	2.5	[2.6] A	2.4	2.2 F	2.3	3.3	(4.0) P S	4.4	[4.6] N	4.5	4.9	5.2	4.9	5.1	5.2	5.1	C	C	C	4.5	4.2	(3.7) S H	3.2
13	2.8	2.7	2.7 F	2.5	2.4	2.4 F	3.7	4.1	4.4	4.8	(4.8) S	5.1	5.0	4.9	5.1	5.4	5.2	5.0	5.2	5.4	5.6 V	(4.7) S A	4.0	3.8
14	3.4	3.2 F	3.1	2.7	(2.4) F	2.5 F	3.9	4.5	5.4	6.1	5.8	5.4	5.6	5.4	5.6	5.4	5.7	[illegible]	6.0	6.5	6.1	5.4	4.4 S	4.3
15	4.1	3.6	3.2	2.7 J S	(2.4) S	2.5	3.9	[illegible]	5.5	5.4	5.8	5.6	5.2	5.3 H	5.4 H	5.4	5.4	5.6	5.9	6.2	6.6	5.3	4.8	4.3
16	4.1	3.8	3.5	3.2	2.7	2.4	4.3	5.2	[illegible]	5.9	6.2	6.1 H	[illegible]	5.9	6.6	6.6	6.1	6.2	(6.4) A S	(6.6) A S	6.8	5.8	4.6	3.6
17	2.8	2.4	2.2	2.1	1.9	1.9	3.2	[illegible]	4.7	4.7	5.4	5.0 H	5.3	4.9 H	5.0 H	5.5	6.1	5.5	5.2	5.6	5.3	(4.2) S	(3.7) F	3.7
18	3.1	3.6	2.6	2.4	2.1	2.2	3.5	[illegible]	4.8	5.6 H	5.5	6.2	5.7	6.2 H	6.4	6.2	6.5	6.4	6.8 K	8.2 K	6.5 K	K 3.7 S J	2.6 K	2.8 K
19	2.6 K	2.2 K	[illegible] K	A K	S A K	K (2.0) S J	3.3 K	[illegible] K	4.3 K	5.0 K	4.5 K	4.5 K	<4.3 G K	4.8 K	5.1 K	5.0 K	4.8 K	4.7 K	5.0 K	5.5 K	6.1	5.5	4.7	4.0 F
20	3.5	2.9	2.7	2.6	2.6	2.4	3.7	4.1	4.6	5.0	6.0	5.6	5.7	5.4	5.2	5.5	5.4	5.3	6.0	6.6	5.9	4.6	(3.4) F	(3.3) F
21	3.0	2.8	2.5	2.5	1.9 F	2.0 F	3.3	4.1 H	5.0	5.4	5.6	5.7	5.6	5.7	6.1	6.2	5.8	5.4	5.6	6.5	6.2	5.0	4.0	3.0 F
22	2.8 F	2.8 F	2.7	2.2 F	2.0 F	(2.2) S	3.9	4.9 H	5.0	5.1	5.3	5.0	5.1	5.1	5.6	5.4	5.4	5.6	5.8	6.5 H	6.5	5.8	5.0	4.3
23	3.4	2.8	(2.9) A	2.7 F	2.5 F	2.4	3.6	4.2	4.7	4.9	5.1	5.0	5.1 H	5.0	5.7	5.5	5.5	5.2	5.7	6.0	5.6	4.5	(4.1) S	4.0
24	3.6	3.5	3.0	2.6	2.2	2.3	3.8	5.0	[illegible]	6.2 H	6.4	6.0	6.2	6.7	6.6	6.4	6.2	6.0	5.9	6.0	6.3	5.3	4.9	4.3
25	3.9	3.7	3.4	3.1	3.0	2.8	4.5	5.4	6.0	6.1	6.7	6.1	6.3	6.4	6.6	6.7	6.5	6.0	6.2	6.5	6.3	5.6	4.9	4.5
26	4.3	4.2	3.7	3.3	2.8	2.6	4.3 V	5.5	6.1	7.0	7.2	6.8	6.2 H	6.1	5.9	6.2	6.3	6.8	7.2	(7.6) S	6.7	5.4	4.8	4.5
27	4.3	4.2	3.7	2.9	2.5 F	2.4	3.9	5.4	6.0	5.5	(5.7) H	6.4	6.1	5.8 H	5.9	5.6	5.8	5.6	5.5	5.6	5.6	5.0	4.7	4.2
28	3.8	3.6	3.2	3.1	3.0	(3.0) S	4.5 H	4.9 H	6.5	6.6	6.4	6.3	6.5	6.3	6.4	6.8	6.7	6.6	6.3	6.8	6.3	4.9	4.5	4.1
29	3.8	3.8	3.5	3.2	2.7	2.5	4.1	5.5	6.4	6.6	6.0	6.2	6.3	7.1	7.4	7.2	6.7	6.8	7.3	7.8	7.2	6.6	5.6	4.3
30	3.5	(3.0) J S	(3.0) S	3.2 J S	3.2	2.7	3.2	4.3 J K	(4.6) H K	4.5 K	5.0 K	<4.3 G K	<4.5 G K	4.9 K	5.0 K	5.1 K	5.2 K	5.0 K	5.0 K	K (5.4) J S	(5.2) J S	A	A	3.0 F
31	3.1	3.1 J S	2.9 J S	2.7	2.6	(2.2) J S	3.9	5.0	6.0	7.0	6.0	6.5	6.8	7.4	[7.0] C	6.5	6.9	7.1	(7.8) S	(7.8) J S	(7.1) S P	6.3	5.2	4.3
Median	3.5	3.1	2.9	2.6	2.4	2.4	3.7	4.3	4.8	5.1	5.5	5.2	5.3	5.2	5.4	5.4	5.4	5.4	5.6	5.9	5.9	5.0	4.4	4.0
Count	31	31	30	29	30	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	31	30	30	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 72

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), August (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Scaled by: McC., E.J.W., A.C.K.

Calculated by: McC., E.J.W.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	
1	3.6	3.6F	(2.9)F	(2.6)F	2.8F	3.2	3.9	3.9	4.4	4.5	4.7	4.9	5.1	5.0	5.0H	5.2H	5.2	5.4	5.2	5.0	4.8	4.5	4.1	4.0	
2	3.6	2.8	2.7	2.3	2.0	2.9	3.7	<3.9G	4.5	4.7	4.7	5.2	5.0	4.9H	5.1	5.1H	5.1	5.2	5.5	5.7	4.7	3.8	3.3	3.5	
3	3.1	2.4FK	[2.2]AK	2.1K	K(1.6)AS	2.8K	<3.4GK	<3.7GK	<3.8GK	<3.9GK	(4.3)AK	4.3K	4.7HK	(4.5)AK	4.1K	4.5HK	4.5K	4.1K	4.4K	4.3K	K(4.5)SF	4.2K	4.1K	(2.6)FK	
4	2.5K	(1.9)FK	(1.9)FK	(1.9)FK	2.0FK	2.8K	<3.4GK	4.0HK	<4.0GK	4.5HK	<4.2GK	<4.3GK	<4.3GK	4.6K	4.5K	4.6HK	4.5K	4.9K	5.6K	5.4K	5.4	4.9	4.7H	3.8	
5	3.1F	3.2	2.7F	2.6	2.2F	3.2	3.8	4.4H	5.2	5.1	5.6	5.2	[5.4]C	5.6H	5.7	5.6H	5.1	5.0	5.4	6.4	6.0	5.4	4.8	4.6	
6	3.5	3.4	2.5F	2.0	1.8F	3.0	4.1	4.2H	4.6	[4.5]A	A	4.7	4.9	4.8	4.8	4.8	5.1	4.9	5.0	5.4	5.0	4.5	4.1	3.8F	
7	3.5	3.2	2.3F	2.0	2.0	3.1	3.8	4.2	4.7H	(4.4)S	(4.8)A	4.6	<4.5G	4.5	4.8	4.7H	4.8H	4.8	4.8	5.2	5.1	(4.2)AF	3.7F	3.0F	
8	2.6F	(2.4)F	(2.4)F	(2.5)F	(2.7)F	3.1	3.9	4.9	5.0	5.0	5.7	5.3	5.1	5.2	5.2	5.2	5.4	5.5	5.2	4.9	5.0	4.5	(3.7)S	3.6F	
9	3.4F	3.0F	2.7F	2.6F	2.4	3.8	5.0	5.6	6.0	6.2	5.9	5.5	5.7	5.8	5.7	6.0	6.0	5.9	6.1	7.0	6.7	5.3	4.2	3.8	
10	3.6	3.3	3.0	2.8	2.4	2.9	(3.4)A	4.5	4.7	4.8H	5.1	4.8	4.9H	4.7	5.0	4.9	4.8	4.8	4.9	5.2	[5.0]C	4.2	3.4	3.1	
11	3.2	2.8	2.4	2.4F	2.2	2.7	3.5	(3.9)S	4.2K	4.5K	4.7K	<4.3GK	<4.2GK	(4.5)AK	4.6K	4.8K	4.9K	5.0K	5.3K	5.8	5.1	5.2Z	3.6	3.2	
12	2.7	2.5	(2.6)AS	2.3	2.1	2.8	3.7	4.3	4.5	4.7	4.7	4.9	5.1	5.0	5.0	5.1	C	C	C	4.8	4.5	4.0	3.4	3.0	
13	2.7	2.7F	2.7F	2.6	2.2	3.2	3.8	4.4	4.8	(4.9)S	5.2	5.1	(5.0)A	5.0	5.2	5.4	5.1	5.2	5.4	5.5	5.0	(4.2)S	3.9	3.5F	
14	3.3	3.2F	2.9F	2.5	2.3	3.4	4.5H	5.0	6.0	6.0	5.2	5.6H	5.4	5.4	5.6	5.5	5.8	6.0	6.6	6.2	6.0	4.8	4.4	4.2	
15	3.8	3.4	3.2	2.5	2.4	3.4	4.2	5.0	5.2	[5.6]H	5.4	5.4	5.4	5.3	5.6H	5.5	5.5	5.7	5.9	6.2	5.6	5.0	4.6	4.1	
16	4.0	3.5	3.4	3.0	2.4	3.4	4.8	5.4	6.0	5.9	6.4	5.8	5.9	6.1	5.9	5.9	5.9	(6.2)PS	6.4	6.8	6.3	5.3	4.1	3.2F	
17	2.6	2.3	2.1	1.9	1.9F	2.5	3.4	4.9H	(5.0)H	(5.0)H	5.1	5.1	5.3	4.9	5.3	5.8	5.8	5.3	5.6	5.6	4.8	(4.0)SF	(4.0)F	3.4	
18	3.0	2.9	2.5	2.3	2.1	2.9	(3.9)S	4.1H	5.1	5.5H	6.0H	5.7	5.8	6.6	6.3	6.4	6.4	6.2	7.9K	7.0K	5.6HK	3.0K	2.3K	2.6K	
19	2.4K	1.9K	(1.7)AK	AK	AK	2.8K	3.7K	4.2HK	4.5K	4.8K	4.5K	4.5K	4.7K	5.2K	5.0K	4.9HK	4.8K	4.9K	5.1K	6.0K	5.8	5.1	4.3	3.6	
20	3.2	2.8	2.7	2.7	(2.5)S	3.1	4.5	4.8	4.9	5.5	5.3	5.7	5.5H	5.2	5.4	5.4	5.5	5.7	6.2	6.2	5.2	3.9	3.2	(3.0)F	
21	(2.8)S	2.5	2.5	(2.4)S	1.8F	2.8	3.9	4.5	5.3	5.4	5.6	5.4	5.8	6.1	6.2	6.2	5.5	5.4	5.8	(6.6)S	5.6	4.4	3.4	2.9F	
22	2.7F	2.6F	2.4	(2.0)S	(1.9)S	3.0	4.7H	5.0	5.0	5.5	5.2	5.1	5.1	5.3	5.6	5.5	(5.3)S	5.4	6.4	6.7	6.1	5.2	4.3	3.9	
23	3.1	(2.7)A	[2.8]A	(2.7)A	(2.4)S	2.8	(3.8)S	4.4H	4.9	4.9	5.0	4.9	4.9	5.4	5.7	5.4	5.3	5.4	5.8	6.3	5.0	4.2	4.0	3.7	
24	3.5	3.3	2.7	2.4	2.1	3.0	4.6	5.4	5.9S	6.2	6.2	5.8	6.4	6.9	6.4	6.3	6.3	5.9	5.8	6.4	5.7	5.2	4.7	4.1	
25	3.8	3.7	3.2	3.0	2.8	3.6	4.8	5.8H	5.7	6.4	6.2	6.1	6.6	6.4	6.6	6.4	6.2	6.2	5.8	6.6	5.7	5.1	4.6	4.2	
26	4.1	4.0	3.4	2.8	2.5	3.3	5.1	5.8	6.6	7.2	6.8	6.4H	6.1	6.1	6.0	6.1	6.5	6.8	7.6	7.0	5.8	5.1	4.6	4.5	
27	4.2	4.2	3.3	2.7	2.3	(3.0)SJ	4.5H	5.7	6.1	5.3	6.1	6.2	5.9	6.1	5.8	5.6	5.7	5.5	5.6	5.7	5.3	4.9	4.4	(3.9)S	
28	3.6	3.5	3.2	(3.1)S	(2.9)S	3.5	4.7	5.9	6.6H	6.4	5.9	6.5	6.4	6.2H	6.5	6.7	6.5	6.3	6.4	6.6V	5.5	4.7	4.4	3.9	
29	3.6	3.6	3.4	3.0	2.6	(3.0)S	4.6	5.9	6.8	6.5	6.1	6.3	6.5	7.6	7.4	6.8	6.6	6.7	8.0JS	7.8JS	6.0	5.8	4.4	3.9	
30	3.3	(3.0)JH	3.1	3.2	3.0	2.8	3.7	4.4K	4.5K	4.5K	4.6K	<4.5GK	4.7K	5.0K	5.1K	5.0K	5.4K	5.4K	5.0K	K(5.6)JS	(4.6)JS	[3.8]S	(3.0)S	2.9F	
31	3.0	3.0JS	(2.7)JS	2.5	2.5JS	3.0	4.5	5.6	6.6	6.4	6.4	6.6	7.0	7.2	[7.0]C	6.7	6.8	7.6	7.5	7.7	(7.5)PS	(5.6)JS	4.7	4.3	
Median	3.3	3.0	2.7	2.5	2.3	3.0	3.9	4.5	5.0	5.1	5.2	5.2	5.3	5.3	5.6	5.5	5.4	5.4	5.7	6.2	5.4	4.7	4.1	3.7	
Count	31	31	31	30	30	31	31	31	31	31	30	31	31	31	31	31	30	30	30	31	31	31	31	31	

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 73

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

h'F1 (Characteristic), Km (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W. Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							240	200	(210)A	190	200	190	200H	200	200	190H	200H	(210)A	230					
2							230	230	200	200	180H	(180)A	190H	[200]A	220	[230]A	240	220	230					
3							260K	200K	190HK	180HK	200K	(200)AK	(190)AK	(200)AK	200K	230K	220K	250K	230K	250K				
4							AK	220K	210K	200K	190K	190K	180K	180K	200K	(230)AK	220K	210K	240K	260K				
5							230	230	220	200H	190	190	190	200	(220)A	210	210	220	250					
6							230	230	[220]A	210H	[200]A	200H	200	200	A	A	240	220	230					
7							240	220	210	200	180H	180H	210	200	220	210H	220	230	250	A				
8							210	210	(220)A	210	200	190	[180]A	170H	200	200	(210)A	(220)A	A					
9							240	(220)A	220	190	190	190	190	190	180	210	210	220	230					
10							240	(240)A	190	200	200	190H	180	200	200	220	210	[210]A	220					
11							A	220	210K	200K	190K	200K	200K	[200]A	200K	210K	[220]AK	230K	AK					
12							Q	230	210	180H	200H	190H	190H	190	200	220	A	C	C					
13							230	[220]A	210	210	180H	[180]A	180	(210)A	210	210H	250	(240)A	250					
14							A	(230)A	A	A	190	190	180H	190	210	210	200	A	A					
15							210	220H	200	220	180H	(180)H	210	180	190	300	210	220	220					
16							210	[210]A	210	180H	180	200	210	200	200	210	A	A	A					
17							Q	220	210	[220]A	220	180H	170H	210	190H	200H	210	230	240					
18							230	210	200	190	190	200	180H	210H	210	(210)A	220	210	240K					
19							QK	220K	210K	200K	180HK	190HK	210K	210K	200K	190HK	230K	230K	260K					
20							260	220	220	200	170H	180H	180	230	210	230	230	(230)A	A					
21							230	230	220	200	190	180	190	200H	200	210	(200)A	220	240					
22							230	210	200H	210	180	190	190	200	190H	220	220	230	240					
23							Q	230	210	200	200H	190	190	180H	200H	240	220	230	250					
24							Q	230	230	210	190	190	200H	190	220	220	220	230	240					
25							230	220	200	200	190	200	180	190H	210	200	210	210	A					
26							Q	230	230	210	190	180	190	190	190H	190	200	240	240					
27							240	230	230	190H	180H	190	190	200	200	220	210H	230	240					
28							230	220	210	200	200H	190	180H	200	190	200	210	210	230					
29							230	220	200H	[210]A	(220)A	190	190H	250	220	230	210	220	260					
30							Q	260K	220K	190HK	200K	200K	190K	200HK	240K	210K	220K	220K	240K					
31							Q	A	220	200H	200H	200	200	220	[220]C	220	230	240	240					
Median							230	220	210	200	190	190	190	200	200	210	220	220	240	—				
Count							20	30	30	30	31	31	31	31	30	30	29	28	24	2				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF1, Mc (Unit), August (Month), 1952 — (Characteristic)

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							3.0	(3.4)L	3.8	4.0	4.2	4.3	4.5H	4.4	4.4	4.3H	4.2H	3.8	3.4					
2							L	3.8	3.8	4.1	4.3H	4.3	4.4H	[4.4]A	4.3	4.2	4.0	3.6	3.4					
3							3.0K	3.5K	3.7HK	3.8HK	4.0K	4.1K	4.1K	4.2K	4.2K	4.0K	3.9K	3.7K	LK	LK				
4							AK	3.5K	3.9K	4.1K	4.1K	4.2K	4.3K	4.3K	4.2K	4.1K	4.0K	3.8K	3.4K	LK				
5							L	3.6	3.9	4.2H	4.4	4.4	4.5	4.4	4.4	4.3	4.1	3.9	3.5					
6							L	3.7	4.0	4.1H	[4.2]A	4.3H	4.4	4.4	4.3	4.2	4.0	3.8	L					
7							L	3.6	3.9	4.1	4.2H	4.3H	4.5	4.3	4.2	4.2H	4.0	3.8	3.4	A				
8							L	3.7	4.1H	4.3	4.3	4.4	[4.4]A	4.4H	4.4	4.3	4.1	3.9	L					
9							L	L	4.0	4.2	4.4	4.6	4.5	4.5	4.4H	4.3	4.2	3.8	L					
10							L	3.5H	3.8	4.0	4.2	4.3	4.3	4.3	4.2	4.1	3.9	3.6	L					
11							A	3.5	3.8K	4.0K	(4.1)SK	4.2K	4.3K	4.3K	4.3K	4.2K	[4.0]AK	3.7K	AK					
12							Q	3.5	3.9	4.1H	4.2H	4.3H	4.3H	4.3	4.2	4.2	A	C	C					
13							L	3.7	3.8	4.1	4.3H	4.3	4.4	4.4	4.3	4.3H	4.0	3.8	L					
14							A	L	A	A	4.3	4.5	4.5H	4.4	4.4	4.1	4.0	3.7	3.1					
15							L	3.4H	4.1	4.3	4.3H	4.5H	4.5	4.5	4.5	4.3	4.2	3.8	L					
16							L	A	L	4.3H	4.4	4.5	4.6	4.5	4.4	4.3	A	A	A					
17							Q	3.5	3.9	4.3	4.3	4.3H	4.4H	4.4	4.3H	4.2H	4.0	L	L					
18							L	3.4	3.9	4.3	4.3	4.4	4.5H	4.5H	4.4	4.3	4.1	L	LK					
19							QK	3.5K	3.8K	4.0HK	4.2HK	4.2HK	4.3K	4.3K	4.2HK	4.2K	4.0K	3.7K	LK					
20							L	L	L	4.2	4.3H	4.4A	4.5	4.4	4.4	4.2	4.0	3.7	A					
21							L	L	3.9	4.1	4.3	4.4	4.5	4.5H	4.4	4.3	4.0	(3.5)L	L					
22							L	3.5	4.0H	4.2	4.3	4.4	4.4	4.4	4.3H	4.3	4.1	3.7	L					
23							Q	(3.7)L	3.9	4.1	4.3H	4.4	4.5	4.5H	4.3H	4.3	4.1	3.7	L					
24							Q	L	4.0	4.2	4.4	4.5	4.6H	4.5	4.5	4.2	4.2	L	L					
25							L	L	3.9	4.2	4.3	4.7	4.6	4.6H	4.5	4.2	4.2	L	L					
26							Q	L	L	4.3	4.4	4.6	4.5	4.5	4.6H	4.3	4.1	L	L					
27							L	L	4.1	4.3H	(4.5)L	4.5	4.5	4.5	4.4	4.4	4.2H	L	L					
28							L	L	L	4.3	4.4H	4.6	4.6H	4.7	4.5	4.4	4.2	L	L					
29							L	L	4.0H	4.3	4.5	4.7	4.6H	4.5	4.5	4.5	4.2	L	L					
30							Q	3.5K	(4.1)HK	4.2HK	4.2K	4.3K	4.5HK	4.3HK	4.3K	4.2K	3.6K	3.7K	LK					
31							Q	A	L	4.1H	4.4H	4.7	4.8	4.7	[4.6]C	(4.5)F	4.2	L	L					
Median							–	3.5	3.9	4.2	4.3	4.4	4.5	4.4	4.4	4.3	4.1	3.7	3.4	—				
Count							2	19	25	30	31	31	31	31	31	31	29	20	6					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 75

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							120	110	110	110	100	110	100	110	110	110	110	110	110	110				
2							(120)A	110	100	100	100	100	100	100	100	100	100	100	110	120				
3							110K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	110K	110K	120K				
4							120K	110K	110K	100K	100K	100K	100K	100K	110K	100K	110K	110K	110K	130K				
5							110	110	100	100	100	110	100	100	100	100	110	110	110	120				
6							A	110	110	110	110	110	110	110	110	110	110	110	110	120				
7							110	110	110	110	110	110	110	110	110	110	110	100	110	120				
8							120	110	110	100	100	100	100	110	100	110	100	100	100	A				
9							(120)A	(120)A	110	110	110	100	100	100	100	110	110	110	110	130				
10							110	100	100	100	100	100	100	100	100	100	110	110	120	A				
11							120	110	100K	100K	100K	100K	100K	100K	100K	110K	110K	110K	120K	A				
12							110	110	110	100	100	100	100	100	100	110	110	C	C	C				
13							120	110	100	100	100	100	100	100	100	110	110	110	120	A				
14							S	110	110	100	100	100	100	100	100	100	100	110	110	A				
15							110	100	(100)A	A	A	A	A	100	100	100	A	A	110	110				
16							110	100	100	100	100	100	100	100	100	100	100	100	110					
17							A	100	100	100	100	100	100	100	100	100	100	100	100					
18							110	100	100	100	100	100	100	100	100	100	100	100	110K					
19							(130)SK	100K	110K	110K	100K	100K	110K	100K	100K	100K	110K	110K	110K	120K				
20							120	110	110	110	110	110	110	110	110	110	110	110	120	120				
21							120	110	110	110	100	100	100	100	(110)A	100	[100]A	110	A					
22							A	110	110	110	110	100	110	110	110	110	110	110	120					
23							(120)S	110	110	110	110	110	110	100	110	110	110	110	120					
24							(130)S	110	110	110	110	100	(100)A	100	100	(110)A	110	110	100					
25							(130)S	110	110	100	100	100	[100]A	100	100	100	100	110	A					
26							(150)S	[120]A	100	100	100	100	100	[100]A	100	100	110	110	A					
27							120	110	110	100	100	100	100	100	100	100	100	110	120					
28							120	110	100	100	100	100	100	100	100	100	100	100	110					
29							S	100	100	110	110	110	110	110	110	110	110	100	100					
30							120	110K	110K	110K	110K	100K	110K	100K	(100)AK	[100]AK	100K	100K	AK					
31							A	110	110	110	110	110	110	110	[110]C	110	110	120	(120)S					
Median							120	110	110	100	100	100	100	100	100	100	110	110	110	120				
Count							25	31	31	30	30	30	30	31	31	31	30	27	26	11				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 76

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K., E.J.W.

Calculated by: McC., E.J.W.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							1.8	2.4	2.7	2.9	A	A	A	A	A	A	A	A	A	A				
2							A	2.5	2.8	3.0	[3.1]A	3.2	A	A	3.2	[3.1]A	3.0	2.7	A	A				
3							A K	A K	A K	A K	A K	A K	A K	A K	3.3 K	[3.2]AK	3.0 K	2.7 K	2.2 K	A K				
4							A K	2.4 K	2.7 K	2.9 K	(3.2)PK	[3.3]AK	3.4 K	3.3 K	3.3 K	[3.1]AK	2.9 K	[2.6]AK	2.2 K	S K				
5							1.9	2.4	[illegible]	A	A	3.4	3.5	3.4	3.3	3.2	3.0	2.8	(2.2)A	S				
6							A	A	A	A	A	A	(3.4)P	[3.4]A	3.3	3.2	3.0	2.8	A	S				
7							A	2.5	A	A	A	A	3.4	3.4	3.3	3.3	3.0	2.7	A	A				
8							1.9	2.5	2.7	A	A	A	A	3.4	3.3	A	A	A	A	A				
9							1.9	2.5	2.8	[3.0]A	3.2	A	A	A	A	A	A	A	2.2	S				
10							A	A	A	A	A	A	A	3.3	3.2	3.1	3.0	2.6	A	A				
11							1.7	A	A K	A K	A K	A K	3.4 K	A K	A K	A K	A K	A K	A K	A				
12							A	A	A	A	A	3.3	3.3	A	A	A	2.9	C	C	C				
13							1.8	2.3	2.8	A	A	A	A	A	A	3.2	3.0	2.6	A	A				
14							S	A	A	A	A	3.3	3.3	3.4	3.4	3.1	2.9	2.6	A	A				
15							A	2.4	A	A	A	A	A	3.4	3.3	A	A	A	A	S				
16							1.9	A	A	A	3.0	3.3	A	A	A	A	A	A	A					
17							1.8	2.4	2.8	2.7	A	A	3.4	A	A	3.1	2.9	2.7	A					
18							A	A	A	A	A	A	3.4	3.4	3.3	3.2	[2.9]A	2.6	A K					
19							.8 K	2.3 K	[2.6]AK	3.0 K	3.2 K	3.3 K	3.4 K	3.4 K	3.3 K	A K	A K	2.6 K	A K	S K				
20							A	A	2.8	[3.0]A	3.2	(3.3)A	3.4	3.4	3.3	3.2	3.0	2.6	1.8	S				
21							1.7	2.2	A	A	A	A	3.4	3.5	[3.3]A	3.1	[2.8]A	2.5	A					
22							A	A	A	A	A	(3.3)A	3.4	3.4	3.3	3.1	2.9	2.5	A					
23							1.8	A	A	2.8	[3.0]A	3.3	A	A	3.3	3.1	2.9	2.6	1.8					
24							1.8	2.5	2.8	2.7	A	A	3.4	[3.4]A	3.3	3.1	2.9	2.5	A					
25							1.8	2.5	[2.8]A	3.0	3.2	3.4	3.5	3.4	3.3	3.2	[2.9]A	2.6	A					
26							1.8	2.5	2.9	3.1	3.3	3.4	3.5	[3.4]A	3.4	3.2	3.0	2.7	A					
27							A	A	A	3.1	A	A	A	A	A	3.2	2.9	2.5	1.9					
28							1.8	2.4	A	A	A	A	3.4	3.4	3.3	[3.2]A	3.0	2.4	A					
29							1.8	A	A	A	A	A	A	A	3.3	[3.0]A	2.9	A	A					
30							1.7	2.5 K	2.7 K	3.0 K	[3.2]AK	3.4 K	(3.3)PK	3.4 K	3.5 K	A K	A K	2.5 K	A K					
31							A	A	2.6	2.8	(3.3)P	3.4	3.4	3.5	[3.4]C	3.2 S	2.4	2.5	1.9 H					
Median							1.8	2.4	2.8	3.0	3.2	3.3	3.4	3.4	3.3	3.2	2.9	2.6	2.0	—				
Count							17	17	15	14	11	14	19	17	23	22	23	23	5					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 77

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., A.C.K.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11
1	E	E	E	E	E	E	G	G	70 100	50 110	68 110	50 110
2	23 110	46 100	E	40 H 100	25 100	24 100	25 100	35 110	50 110	46 110	51 110	50 110
3	35 110	38 110	49 100	57 100	26 110	68Y 120	32 110	36 110	49 100	37 110	40 100	5.2 100
4	E	23 140	E	E	E	25 120	30 110	34 120	39 110	40 120	G	38 110
5	E	E	E	E	33 100	23 130	32 120	49 120	37 120	40 110	4.5 110	G
6	E	E	27 110	25 100	E	45 110	41 H 110	41 110	57 110	[illegible] 110	117 110	82 110
7	E	26 140	2.3 140	E	40 110	40 110	30 110	70 110	40 110	72 110	4.6 110	47 110
8	28 110	35 H 110	38 110	22 110	52 100	20 130	G	37 120	50 110	54 110	50 110	42 110
9	32 110	36 H 110	E	32 110	E	25 120	35Y 110	7.1 100	4.0 120	39 110	42Y 110	54 110
10	E	E	70Y 110	E	E	E	3.4 110	39 110	4.1 110	50 100	68Y 100	45 100
11	E	E	50 110	25 120	24 H 100	23 110	30 120	43 100	49 110	40 110	40 110	56Y 110
12	E	E	80 100	47 100	35 100	78 110	3.8 100	75 110	145 110	100 110	90 100	G
13	70 H 110	90 100	44 H 100	27 130	42 100	76 110	40 110	41 110	160 110	180 100	40 110	7.0 110
14	E	E	40 110	E	E	37 110	38 110	66 H 110	68 110	90 100	72 110	G
15	29 100	42 100	28 100	27 100	E	74 100	20 110	35 120	43 100	52 100	98 100	35 100
16	E	E	E	E	E	E	70 H 100	45 100	4.4 100	38 100	39 110	G
17	E	E	36 100	40 100	66 100	E	50 H 130	30 110	G	78 100	40 110	43 110
18	28 100	24 100	40 100	E	E	30 100	30 110	34 110	38 110	41 100	4.3 100	70 H 100
19	E	44 100	28 100	41 100	38 100	E	G	32 110	40 120	G	G	G
20	E	E	E	E	23 110	E	36 120	39 110	34 120	35 110	34 120	37 120
21	E	E	E	E	E	E	G	35 120	37 110	45 110	41 110	38 110
22	24Y 110	31 100	27 100	24 100	24 100	E	1.8 120	32Y 110	36Y 110	38 110	42 110	70Y 110
23	E	50 110	49 110	38 110	30 110	24 110	G	35 120	37 110	4.8 110	41 110	G
24	E	E	22 110	E	115 110	E	68 130	50 110	35 120	8.0 110	4.1 110	68 100
25	E	E	23 100	117 100	30 110	E	G	31 110	38 110	G	G	66Y 110
26	31 100	31 100	27 100	22 100	24 100	25 110	28 100	32 100	33 100	35 100	40 100	70Y 100
27	23 100	E	23 100	E	29Y 100	E	28 120	31 110	37 110	38 110	39 110	45 110
28	24 110	E	E	E	E	E	G	G	39 110	45 100	40 100	38 100
29	31 100	31 100	28 100	23 100	24 100	23 100	G	32Y 100	37 100	50 110	46 110	4.0 110
30	E	E	E	E	E	E	G	G	G	G	33 110	G
31	26 110	E	E	E	E	24 130	31 120	41 110	37 110	31 110	G	G
Median	* *	* *	27	22	2.4	23	30	35	39	45	4.1	43
Count	31	31	31	31	31	31	31	31	31	31	31	31

Day	12	13	14	15	16	17	18	19	20	21	22	23
1	53 110	38 110	86 110	4.1 110	29 110	51 110	28 110	30 120	72 H 110	33 110	43 110	30 110
2	4.6Y 110	61 110	5.3 110	70 110	47 120	G	40 110	2.9Y 120	24 110	40 110	65 110	41 110
3	70Y 100	58 110	G	48 110	G	45 130	3.9 130	39 120	66 120	50 110	23 120	E
4	G	G	G	72 H 110	G	31 110	3.5 120	G	53 110	35 110	E	E
5	36 120	G	50 100	G	G	G	2.6 130	4.8 110	35 120	40 110	32 110	37 110
6	G	42 110	65 120	5.0 120	41 130	45 120	30 120	2.0 130	E	E	35 110	22 110
7	G	G	G	36 110	G	G	38 110	38 110	38 110	54 H 110	50 110	26 110
8	60 100	38 110	50 100	62 100	70 100	70 100	60 100	38 100	31 100	48 110	45 110	37 110
9	50 110	60 100	74 100	50 120	5.2 110	33 110	25 130	G	E	30 110	E	E
10	40 100	G	G	G	4.3 130	60 110	75 120	48 120	36 120	36 H 120	70 H 120	68 H 120
11	G	52 100	47 110	65 H 110	7.6 100	7.0 H 110	90 110	28 130	E	E	31 110	28 [illegible]
12	72Y 110	70Y 110	43 100	64 110	56 110	C	C	C	42 130	60 110	60 110	8.8 110
13	8.0 100	60 100	195 120	G	70 120	50 120	70 110	60 110	47 110	70 110	68 110	30 110
14	G	G	G	G	G	46 120	37 110	52 110	E	27 100	37 100	25Y 100
15	40Y 100	48 100	39 100	4.4 100	46 100	35 100	30 110	2.0 110	29 100	64 100	36 100	31 100
16	49 100	49 110	5.0 H 100	58 100	66 100	54 110	70 110	90 100	[illegible] H 100	38 110	42 100	E
17	G	41 100	40 100	G	G	4.0 120	37 110	60 110	32 110	30 100	25 100	30 100
18	G	G	68 110	47 110	50 110	G	36 120	20 110	E	E	23 100	38 100
19	G	G	G	45 120	40 120	36 120	47 110	G	E	E	E	E
20	G	G	G	G	4.2 110	57 120	52 110	31 120	38 110	E	E	E
21	66Y 120	G	4.0 110	G	4.2 H 110	36 H 120	31 100	(21)S 120	24 110	24Y 110	E	E
22	40 110	4.5 110	G	G	38 130	39 120	35 120	24 130	24 120	29 110	E	E
23	39 120	38 110	40 110	G	G	G	3.2 120	2.5 120	E	28 110	E	22 100
24	59 100	50 100	55 100	53 110	G	G	46 100	26 100	30 100	40 110	30 110	30 110
25	31 100	3.3 110	G	24 100	20 100	G	36 110	36 H 110	60 110	52 100	31 100	32 100
26	G	40 100	37 110	36 120	29 110	39 120	2.8Y 120	23 100	30 100	29 100	E	30 100
27	39 110	4.2 110	37 110	45 110	G	35 110	31 120	2.6 110	2.7 110	30 110	24 110	23 110
28	40 100	G	4.0 100	4.3 100	37 100	35Y 120	2.9Y 110	23 100	E	E	4.0 100	29Y 100
29	4.5 110	4.7 110	G	34 120	35 110	34 110	30 110	30 100	E	E	E	E
30	G	G	28 100	33 100	35 100	G	28Y 100	25 100	2.3 110	40 110	4.5 110	34 110
31	3.1 110	G	C	G	G	G	2.9Y 110	E	E	E	E	E
Median	39	38	4.0	4.1	37	36	36	28	2.9	30	30	2.8
Count	31	31	30	31	31	30	30	30	31	31	31	31

**MEDIAN fEs LESS THAN foE, OR LESS THAN LOWER FREQUENCY LIMIT OF THE RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 78

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ____ (Unit), August (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W., A.C.K.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.0F	2.0F	(2.0)F	(2.0)F	(1.9)FS	2.0FS	(2.3)S	2.1	1.8	1.7	1.5	2.0H	(2.0)PA	1.8	2.0H	2.0	2.0H	2.1	2.2	2.2	2.0	2.0	2.0	2.0
2	2.2	2.3	2.1	(2.0)S	1.9	1.9	2.0	G	(1.6)A	1.7	A	1.8H	1.9	A	1.8	1.8	2.0	2.2	2.1	2.2	2.3	2.0	2.0	2.0
3	2.0	1.9FK	AK	AK	1.9FK	(2.0)FK	GK	1.8K	GK	GK	GK	AK	1.6K	1.5K	GK	GK	1.9K	2.0K	1.9K	1.9K	1.9K	1.9K	2.1K	2.2K
4	2.0FK	(1.9)FK	(1.9)FK	(1.9)FK	1.9FK	2.0FK	2.3K	1.8K	GK	1.9K	1.7K	GK	GK	1.6K	1.8K	1.9HK	2.0K	1.9K	2.0K	2.0K	2.0	1.9	2.0	2.1F
5	1.9	2.0F	2.0F	2.0F	1.9F	2.0F	2.1	2.0H	1.8	2.1	2.2	1.9H	2.1	1.9H	1.9	2.0H	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0
6	2.1	1.9	2.0	1.9F	1.8	1.9	1.9H	1.6	(1.7)A	1.6	A	1.6	1.6	1.8	(1.6)AS	1.6H	1.8	2.1H	2.0	2.0	2.0	1.9	1.9	2.0
7	2.0	2.0F	2.1F	1.9F	1.9	2.0	2.0	1.9	1.8H	A	1.7	1.9H	G	G	1.6	1.9H	1.8	2.0	2.0	2.1	2.1F	2.1	(2.0)AF	1.9F
8	(2.1)F	1.9F	(1.9)F	(1.9)F	(2.0)F	2.2F	2.4	2.0	(2.1)H	2.1	2.1	2.0	2.0	1.9	1.9	2.0	1.9	2.0	2.1	2.2	2.1	2.1	1.9F	(2.0)SF
9	2.0F	2.0F	2.0F	2.1F	2.2F	2.3F	2.4	2.3	2.2	2.3	2.2	2.1	2.0	2.1	2.0	2.0	2.0	2.0	1.9	2.0	2.1	2.2	2.1	2.0
10	1.9	1.9	1.9	1.9	2.0	2.0	2.3V	1.5	1.9	2.0	1.7	1.9	1.9	1.8	1.8	1.9	1.8	2.0	1.9	2.1	(2.1)F	2.0	2.0	1.9
11	1.9	2.1	1.9F	1.9	1.9	1.9	2.2	(1.8)A	1.9K	1.8K	(1.6)SK	K(1.8)AJ	GK	GK	(1.5)AK	1.7K	1.9K	2.0K	AK	2.1	1.9	1.9	1.9H	2.0
12	1.9	1.9	A	1.9	1.9F	2.1	2.1	(1.7)PS	1.9	N	1.8	1.9	2.0	2.0	2.0	1.9	2.0	C	C	C	2.0	2.0	(2.0)SA	2.0
13	1.9	1.9	2.0F	1.9	2.0	2.0F	2.4	2.0	1.8	1.9	(1.9)S	2.0	1.9	1.8	2.0	2.0	2.0	2.1	2.1	2.2	2.1V	(2.0)SA	2.0	2.0
14	2.0	2.0F	2.2	2.1	(2.0)F	2.2F	2.4	2.1	2.3	2.3	2.3	2.0	2.0	2.1	2.0	2.0	2.2	2.1	2.0	2.3	2.2	2.2	2.0S	2.1
15	2.1	2.1	2.1	(2.0)JS	(2.0)S	2.3	2.4	2.2	2.3	2.1	2.3	2.2	2.0	2.1H	1.9H	1.9	1.9	2.0	2.2	2.3	2.2	1.9	2.1	1.9
16	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.4	2.3	2.3	2.3	2.1H	2.0	2.0	2.2	2.1	2.2	2.2	(2.2)AS	(2.2)AS	2.3	2.3	2.3	2.0
17	2.1	1.9	1.9	1.9	1.9	1.9	2.3	1.5	2.3	1.9	2.2	1.9H	2.0	1.8H	1.9H	1.9	2.1	2.0	2.1	2.2	2.1	(2.0)S	(1.9)F	1.9
18	2.0	1.9	1.9	1.9	1.9	1.9	2.2	2.3	2.0	2.0H	1.9	2.1	1.9	1.9H	2.0	2.0	2.1	2.2	1.9K	2.3K	2.3K	K(2.3)SJ	2.0K	1.8K
19	2.0K	1.9K	2.0K	AK	ASK	K(1.9)SJ	2.3K	(1.7)SK	1.8K	2.1K	1.4K	1.5K	GK	1.7K	1.9K	2.0K	1.9K	1.9K	2.0K	2.0K	2.1	2.1	2.1	2.1F
20	2.0	1.9	1.9	1.9	1.9	2.1	2.2	2.3	1.9	2.0	2.3	2.0	2.0	2.0	1.9	2.0	2.0	1.9	2.0	2.1	2.2	2.1	(1.9)F	(1.9)F
21	1.9	1.9	1.9	1.9	2.0F	2.0F	2.2	1.9H	2.0	2.3	2.0	2.1	1.9	2.0	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.0	2.1F
22	2.0F	2.0F	1.9	2.0F	1.9F	(2.0)S	2.3	2.3H	2.4	2.0	2.2	1.9	1.9	1.7	2.0	1.9	2.0	2.0	2.1	2.0H	2.0	2.1	2.0	2.0
23	2.1	1.9	(1.9)A	1.9F	1.9F	2.0	2.1	1.8	1.8	2.0	1.9	1.8	1.9H	1.6	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.0	(2.0)S	2.0
24	1.9	2.0	2.1	2.0	2.0	2.0	2.3	2.3	2.3	2.3H	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.0
25	2.0	2.0	2.0	1.9	1.9	2.0	2.2	2.4	2.4	2.2	2.3	2.1	2.2	2.2	2.1	2.2	2.1	2.2	2.3	2.1	2.1	2.1	2.0	2.0
26	2.0	2.0	2.1	2.2	2.0	2.0	2.3Y	2.2	2.4	2.3	2.4	2.3	2.3H	2.1	2.2	2.2	2.1	2.0	2.1	(2.3)S	2.3	2.0	2.0	1.9
27	1.9	2.1	2.2	2.0	1.9F	2.0	2.1	2.1	2.3	2.3	(1.7)H	1.9	2.1	2.0H	2.0	1.9	2.1	2.2	2.1	2.2	2.0	2.0	2.0	2.0
28	2.0	2.0	2.0	2.0	2.0	(2.2)S	2.4H	2.2H	2.3	2.3	2.3	2.3	2.2	2.0	2.1	2.1	2.2	2.3	2.2	2.2	2.4	2.0	2.0	2.0
29	2.0	2.0	2.0	2.2	2.1	2.1	2.3	2.3	2.4	2.3	2.2	2.0	1.9	1.9	1.9	2.0	2.0	2.0	1.9	2.0	2.2	1.9	2.2	1.8
30	1.7	(1.8)JS	(1.7)S	(1.7)JS	2.0	2.0	2.0	(1.9)JK	(1.9)HK	1.6K	1.8K	GK	GK	1.7K	1.9K	1.9K	2.0K	2.0K	2.0K	K(2.0)JS	(2.2)JS	A	A	1.9F
31	1.8	(1.8)JS	(2.0)JS	2.0	2.0	(1.8)JS	2.1	2.2	2.3	2.4	2.2	2.1	2.0	2.1	C	2.0	2.0	2.0	(2.2)S	(2.1)JS	(2.0)SP	2.0	1.9	1.9
Median	2.0	1.9	2.0	1.9	1.9	2.0	2.3	2.0	2.0	2.1	2.1	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0
Count	31	31	29	29	30	31	31	31	31	29	29	30	31	30	30	31	31	30	29	30	31	30	30	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 79

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

(M3000)F2 (Characteristic), _____ (Unit), August (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC., E.J.W., A.C.K.

Lat 38.7°N, Long 77.1° W

75° W Mean Time

Calculated by: McC., E.J.W.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	29F	30F	(29)F	(30)F	(29)SF	30FS	(33)S	31	27	26	22	30H	(3.0)PA	27	30H	3.0	30H	31	32	3.2	30	30	30	30
2	32	33	31	(30)S	29	2.9	30	G	(25)A	26	A	2.7H	29	A	27	27	30	3.2	31	32	33	30	30	30
3	[illegible]	28K	AK	AK	28FK	(30)FK	GK	27K	GK	GK	GK	AK	25K	23K	GK	GK	2.9K	3.0K	28K	29K	28K	29K	31K	32K
4	30FK	(29)FK	(28)FK	(28)FK	28FK	30FK	33K	27K	GK	2.9K	26K	GK	GK	25K	27K	2.8HK	30K	29K	30K	30K	30	29	30	31F
5	29	[illegible]F	30F	29F	2.8F	30F	31	30H	27	31	32	2.9H	31	28H	29	30H	30	3.0	3.0	30	3.0	28	28	30
6	31	25	29	29F	27	28	28H	25	(26)A	2.5	A	2.5	25	27	(24)AS	25H	27	31H	30	30	2.9	2.9	28	30
7	30	30F	31F	28F	29	30	30	2.8	27H	A	26	29H	G	G	2.5	28H	27	30	30	31	31F	31	(29)AF	2.9F
8	(31)F	29F	(28)F	(28)F	(30)F	32F	34	30	(31)H	31	31	3.0	30	28	2.9	30	2.9	30	31	32	31	31	29F	(30)SF
9	[illegible]F	30F	[illegible]F	31F	32F	33F	34	33	32	33	32	31	2.9	31	29	29	30	30	29	30	31	32	31	29
10	28	29	29	2.9	30	30	33V	23	28	30	26	28	2.9	27	27	2.9	27	32	28	31	(31)F	30	30	29
11	29	31	29F	29	29	29	32	(27)A	28K	22K	(24)SK	K(27)AS	GK	GK	(23)AK	2.6K	2.8K	30K	AK	31	29	29	28H	30
12	28	28	A	29	29F	31	31	(26)PS	29	N	27	28	30	30	30	29	3.0	C	C	C	29	30	(29)SH	30
13	29	29	29F	29	30	30F	34	2.9	27	28	(29)S	3.0	28	27	30	30	30	31	31	32	31V	(30)SA	30	30
14	30	[illegible]F	32	31	(30)F	32F	35	31	33	33	33	30	29	31	3.0	29	32	31	3.0	33	32	32	30S	31
15	31	31	31	(30)JS	(30)-	33	34	32	34	31	34	32	3.0	31H	29H	29	29	30	32	33	32	29	31	29
16	29	31	30	31	32	33	35	34	34	33	33	30H	30	30	32	3.1	32	32	(32)AS	(32)AS	33	33	33	30
17	31	29	[illegible]	28	28	28	33	23	33	28	32	28H	30	27H	29H	2.8	31	30	31	32	31	(30)S	(28)F	29
18	30	29	29	29	29	28	32	34	30	30H	2.9	31	29	28H	30	3.0	31	32	28K	34K	34K	K(33)SJ	30K	27K
19	29K	28K	30K	AK	AKS	K(28)SJ	34K	(26)SK	27K	31K	2.1K	22K	GK	26K	29K	29K	2.8K	29K	30K	3.0K	31	31	31	31F
20	29	29	[illegible]	28	28	31	32	33	29	30	33	30	30	30	29	30	30	29	30	31	32	31	(29)F	(2.9)F
21	28	28	28	28	30F	30F	32	29H	30	33	3.0	31	29	30	31	31	32	31	31	32	33	32	30	31F
22	30F	30F	29	30F	29F	(30)S	33	33H	35	30	3.2	29	2.9	26	29	29	3.0	3.0	31	30H	30	31	30	30
23	31	29	(29)A	28F	28F	30	31	27	27	30	2.9	27	28H	25	30	30	30	29	31	31	32	30	(30)S	30
24	29	30	31	30	30	30	33	33	33	33H	32	30	30	30	3.1	3.1	3.1	3.2	31	31	32	31	31	29
25	30	30	30	2.9	29	29	32	34	35	32	33	31	32	32	31	32	31	32	33	31	31	31	30	30
26	[illegible]	30	31	32	30	30	33V	32	34	33	35	33	3.3H	31	32	3.2	3.1	3.0	31	(3.3)S	33	30	30	29
27	29	31	32	30	29F	2.9	31	31	34	33	(26)H	2.9	31	3.0H	30	29	31	3.2	31	32	30	3.0	30	3.0
28	29	30	30	30	30	(32)S	35H	32H	33	34	33	33	32	3.0	31	31	32	33	3.2	32	34	3.0	3.0	30
29	30	30	30	33	31	31	33	34	35	33	3.2	3.0	29	2.9	2.9	30	29	30	28	3.0	3.2	28	32	27
30	26	(27)JS	(25)S	(26)JS	29	30	30	(29)JK	(28)HK	23K	2.7K	GK	GK	25K	28K	2.8K	2.9K	30K	3.0K	K(30)JS	(32)JS	A	A	2.8F
31	27	(27)JS	(29)JS	30	29	(27)JS	3.1	32	33	34	3.2	31	30	31	C	3.0	30	3.0	(32)S	(31)JS	(30)SP	30	29	2.8
Median	30	29	29	29	29	30	33	30	30	31	3.1	30	29	28	29	29	30	30	31	31	31	30	3.0	30
Count	31	31	29	29	30	31	31	31	31	29	29	30	31	30	30	31	31	30	29	30	31	30	30	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 80

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

(M3000) F1, ______ (Unit), August (Month), 1952
(Characteristic)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards
(Institution)

Scaled by: McC., E.J.W., A.C.K.

Calculated by: McC., E.J.W.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							3.6	(4.0) L	3.5	4.1	3.9	4.0	3.8 H	3.9	3.8	3.8 H	3.8 H	3.7	3.7					
2							L	3.5	3.9	4.0	4.0 H	3.9	3.8 H	A	3.8	3.7	3.6	3.9	3.5					
3							3.3 K	3.9 K	3.8 HK	4.2 HK	4.1 K	3.9 K	4.0 K	4.0 K	3.8 K	3.7 K	3.7 K	3.6 K	L K	L K				
4							A K	3.7 K	3.7 K	3.8 K	4.0 K	4.0 K	3.9 K	4.0 K	3.9 K	3.8 K	3.5 K	3.8 K	3.5 K	L K				
5							L	3.4	3.7	3.9 H	3.7	3.9	3.9	3.9	3.6	3.8	3.7	3.6	3.4					
6							L	3.6	3.7	3.8 H	A	4.0 H	3.9	3.7	3.9	A	3.7	3.8	L					
7							L	3.6	3.8	3.8	3.8 H	3.9 H	3.8	3.9	3.8	3.6 H	3.7	3.8	3.5					
8							L	3.5	3.5 H	3.5	4.0	3.9	A	4.1 H	3.9	3.9	3.6	3.6	L					
9							L	L	3.7	3.8	3.8	3.8	4.0	3.9	3.7 H	3.6	3.5	3.6	L					
10							L	3.5 H	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.7	A	L					
11							A	3.6	3.8 K	4.0 K	(4.0) SK	4.0 K	3.9 K	3.8 K	3.7 K	3.8 K	A K	3.6 K	A K					
12							Q	3.5	3.7	3.8 H	4.0 H	4.0 H	3.9 H	3.9	3.9	3.9	A	C	C					
13							L	3.5	3.7	4.0	3.9 H	3.9	4.0	3.9	3.8	3.6 H	3.7	3.6	L					
14							A	L	A	A	3.9	4.0	3.8 H	3.8	3.7	3.8	3.8	3.5	3.8					
15							L	3.5 H	3.5	3.8	4.1 H	3.8 H	3.9	4.0	3.8	3.8	3.7	3.6	L					
16							L	A	L	3.7 H	4.0	3.7	3.9	3.9	3.8	3.7	A	A	A					
17							Q	3.5	3.8	A	3.7	4.0 H	4.0 H	3.8	3.9 H	3.7 H	3.7	L	L					
18							L	3.7	3.6	3.7	3.8	3.8	3.8 H	3.6 H	3.7	3.6	3.6	L	L K					
19							Q K	3.5 K	3.8 K	4.0 HK	4.0 HK	3.8 HK	3.8 K	3.8 K	3.8 HK	3.6 K	3.6 K	3.5 K	L K					
20							L	L	L	3.9	3.8 H	4.0 H	3.8	3.7	3.8	3.6	3.6	3.6	A					
21							L	L	3.7	3.9	3.9	3.9	3.9	3.7 H	3.7	3.6	3.6	(3.6) L	L					
22							L	3.8	3.9 H	3.8	3.8	4.0	3.9	3.8	3.7 H	3.5	3.7	3.5	L					
23							Q	(3.5) L	3.7	3.8	4.0 H	4.0	3.9	4.0 H	3.8 H	3.5	3.4	3.5	L					
24							Q	L	3.7	3.7	3.9	3.9	3.9 H	3.8	3.7	3.8	3.5	L	L					
25							L	L	3.7	4.0	3.8	3.8	3.9	3.6 H	3.8	3.8	3.6	L	L					
26							Q	L	L	3.7	4.1	4.0	4.1	3.8	3.7 H	3.8	3.8	L	L					
27							L	L	3.8	3.8 H	(3.7) L	4.0	3.8	3.6	3.7	3.5	3.5 H	L	L					
28							L	L	L	3.8	4.0 H	3.9	3.9 H	3.9	3.7	3.8	3.7	L	L					
29							L	L	3.8 H	A	3.7	3.7	3.8 H	3.7	3.5	3.5	3.5	L	L					
30							Q	3.7 K	(3.5) HK	3.7 HK	3.6 K	3.8 K	3.8 HK	3.8 K	3.5 H	3.7 K	3.6 K	3.4 K	L K					
31							Q	A	L	3.7 H	3.8 H	3.7	3.5	3.6	C	(3.7) A	3.5	L	L					
Median							—	3.5	3.7	3.8	3.9	3.9	3.9	3.8	3.8	3.7	3.6	3.6	3.5	—				
Count							2	19	25	28	30	31	30	30	30	30	28	19	6					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 81

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)E (Characteristic), ____ (Unit), August (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC., A.C.K.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							4.3	4.2	4.3	4.4	A	A	A	A	A	A	A	A	A	A				
2							A	4.3	4.4	4.5	A	4.5	A	A	4.2	A	4.3	4.4	A	A				
3							A K	A K	A K	A K	A K	A K	A K	A K	4.5K	A K	4.4K	4.1K	4.3K	A K				
4							A K	4.4K	4.4K	4.4K	(4.5)PK	A K	4.5K	4.4K	4.5K	A K	4.4K	A K	4.3K	S K				
5							4.2	4.3	4.3	A	A	4.1	4.1	4.2	4.3	4.3	4.3	4.2	(4.1)A	S				
6							A	A	A	A	A	A	(4.4)P	A	4.2	4.1	4.2	4.2	A	S				
7							A	4.3	A	A	A	A	4.2	4.1	4.1	4.1	4.2	4.3	A	A				
8							4.2	4.3	4.4	A	A	A	A	4.2	4.2	A	A	A	A	A				
9							4.1	4.3	4.4	A	4.5	A	A	A	A	A	A	A	4.1	S				
10							A	A	A	A	A	A	A	4.4	4.4	4.4	4.3	4.4	A	A				
11							4.4	A	A K	A K	A K	A K	4.3K	A K	A K	A K	A K	A K	A K	A				
12							A	A	A	A	A	4.4	4.4	A	A	A	4.4	C	C	C				
13							4.3	4.3	4.3	A	A	A	A	A	A	4.4	4.2	4.3	A	A				
14							S	A	A	A	A	4.2	4.3	4.1	4.1	4.2	4.2	4.0	A	A				
15							A	4.4	A	A	A	A	A	4.4	4.4	A	A	A	A	S				
16							4.2	A	A	A	4.3	4.4	A	A	A	A	A	A	A					
17							4.0	4.1	4.2	4.4	A	A	4.5	A	A	4.3	4.4	4.2	A					
18							A	A	A	A	A	A	4.3	4.3	4.3	4.4	A	4.3	A K					
19							4.1K	4.3K	A K	4.3K	4.3K	4.2K	4.4K	4.3K	4.3K	A K	A K	4.2K	A K	S K				
20							A	A	4.3	A	4.2	(4.2)A	4.2	4.1	4.2	4.2	4.2	4.3	4.3	S				
21							4.2	4.3	A	A	A	A	4.3	4.2	A	4.2	A	4.2	A					
22							A	A	A	A	A	(4.2)A	4.2	4.3	4.2	4.2	4.2	4.2	A					
23							4.3	A	A	4.3	A	4.3	A	A	4.4	4.1	4.1	4.1	4.3					
24							4.0	4.2	4.2	4.4	A	A	4.2	A	4.1	4.2	4.3	4.2	A					
25							4.2	4.0	A	4.4	4.3	4.3	4.3	4.3	4.3	4.3	A	4.4	A					
26							3.8	4.0	4.1	4.4	4.2	4.2	4.2	A	4.3	4.2	4.4	4.2	A					
27							A	A	A	4.5	A	A	A	A	A	4.3	4.3	4.1	4.3					
28							4.4	4.2	A	A	A	A	4.4	4.4	4.5	A	4.3	4.4	A					
29							4.0	A	A	A	A	A	A	A	4.3	A	4.3	A	A					
30							4.0	4.0K	4.3K	4.4K	A K	4.4K	(4.2)PK	4.2K	4.2K	A K	A K	4.1K	A K					
31							A	A	4.3	4.4	(4.2)P	4.3	4.2	4.1	C	4.2S	4.4	4.2	4.0H					
Median							4.2	4.3	4.3	4.4	4.3	4.3	4.3	4.2	4.3	4.2	4.3	4.2	4.3	—				
Count							17	17	13	12	8	13	19	16	21	17	20	22	8					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 82

Ionospheric Storminess at Washington, D. C.

August 1952

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	2			3	2
2	1	2			3	2
3	3	5	0600	----	5	3
4	4	4	----	----	3	3
5	1	1	----	0100	3	3
6	2	3			4	3
7	2	3			4	2
8	2	1			3	2
9	1	2			2	3
10	2	2			3	3
11	3	5	1300	2400	3	3
12	3	2			4	3
13	2	2			2	2
14	1	2			2	2
15	0	2			1	2
16	1	1			2	1
17	2	3			4	4
18	2	2	2300	----	4	4
19	4	5	----	----	4	3
20	2	2	----	0100	4	3
21	3	1			3	2
22	2	3			2	2
23	2	3			3	2
24	1	1			3	2
25	1	2			1	2
26	1	2			1	2
27	1	2			4	2
28	1	1			2	1
29	1	2			2	3
30	3	5	1200	----	4	3
31	3	3	----	0100	3	3

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 83a

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

July 1952

Day	North Atlantic quality figure		Short-term forecasts issued about one hour in advance of 12-hour period, UT:				Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	Half Day UT		00 to 12	06 to 18	12 to 24	18 to 06	1 to 3/4 days	4/5 to 7 days	8 to 25 days	Half day UT	
July	(1)	(2)								(1)	(2)
1	6	6	(4)	(4)	6	6	5	6		2	(4)
2	6	6	(4)	(4)	6	6	6	6		3	2
3	7	7	5	6	7	6	7	7		2	3
4	6	7	6	6	6	6	7	7		3	2
5	5	5	5	5	5	(4)	6	6		(4)	(5)
6	(4)	7	(4)	(4)	5	5	6	6		(4)	2
7	6	6	5	5	6	6	6	6		3	2
8	7	7	5	6	6	6	6	6		2	2
9	5	7	6	6	6	6	7	7		(4)	3
10	5	6	6	5	5	5	7	7		(4)	3
11	5	7	5	5	5	5	5	5		3	2
12	6	7	5	5	6	7	5	5		3	2
13	8	8	7	7	7	6	5	5		2	3
14	7	7	6	6	6	6	5	6		3	3
15	6	7	5	6	6	6	(4)	6		(4)	2
16	6	7	6	5	6	6	(4)	(4)		3	2
17	6	7	6	6	7	7	(4)	5		2	3
18	7	8	7	7	7	7	6	5		2	2
19	8	8	6	6	7	6	6	6		1	2
20	7	8	6	5	6	5	5	5		(4)	(4)
21	5	7	5	(4)	5	(4)	5	5		(5)	(4)
22	5	7	(4)	(4)	5	5	5	5		3	3
23	6	7	6	6	6	6	6	6		3	3
24	7	7	7	6	7	7	7	6		2	3
25	6	8	7	5	6	7	7	7		2	3
26	5	8	7	5	6	7	6	6		3	2
27	6	7	6	6	7	7	(4)	(4)	X	1	3
28	6	7	6	6	6	7	(4)	(4)	X	2	2
29	8	7	7	7	7	7	6	6		1	1
30	7	7	7	7	7	6	7	6		1	2
31	7	7	6	6	5	6	5	5		3	2
Score:											
P			13		10		7	6			
S			24		23		13	15			
H			1		0		0	0			
(M)			0		0		1	1			
M			0		0		0	0			
(O)			1		0		0	0			
O			2		0		5	3			
G			27		31		25	27			

Scales:

Q-scale of Radio Propagation Quality

(1) - useless
(2) - very poor
(3) - poor
(4) - poor to fair
5 - fair
6 - fair to good
7 - good
8 - very good
9 - excellent

K-scale of Geomagnetic Activity

0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Symbol:

X- probable disturbed date

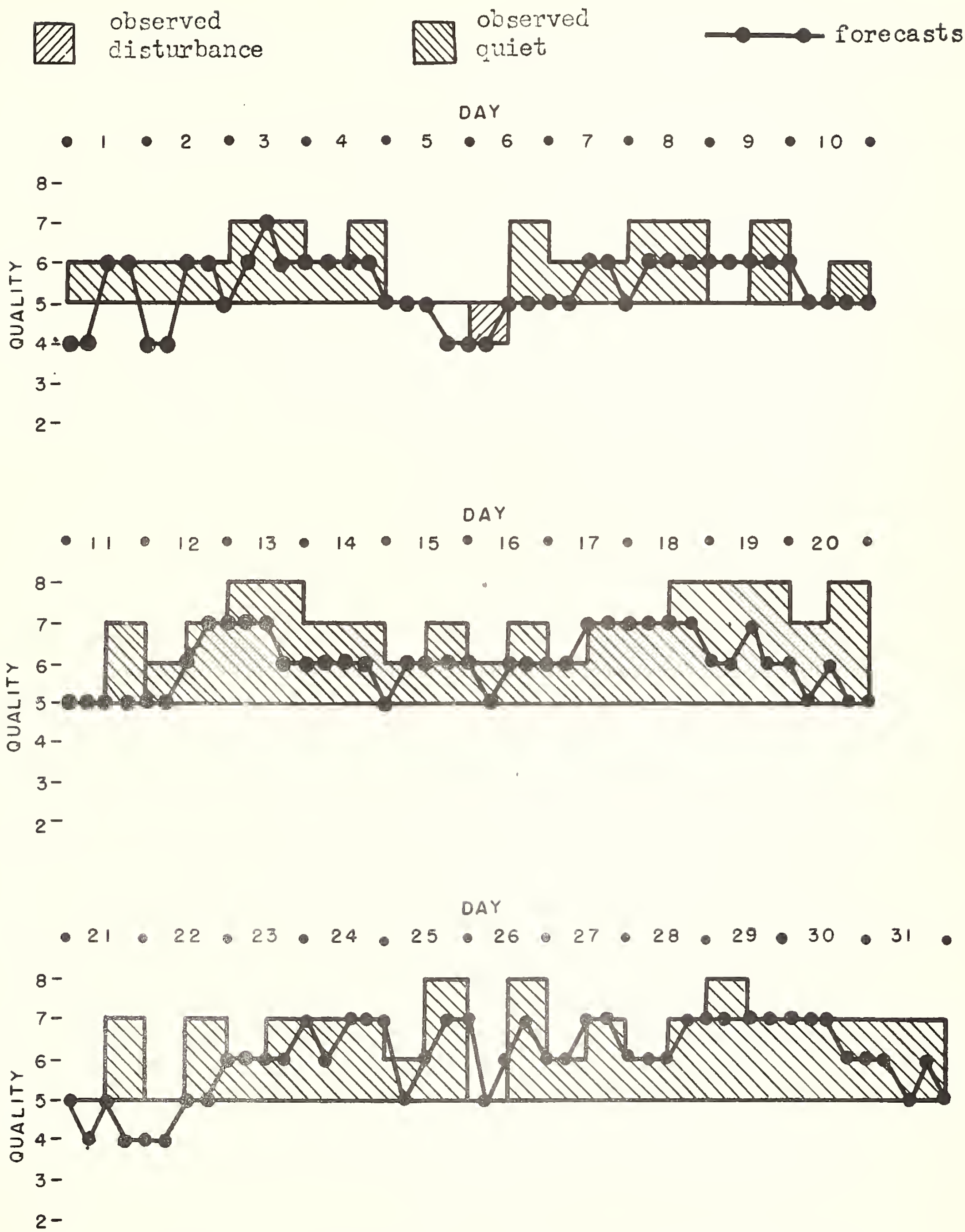
Scoring:

P - Perfect forecast; observed equal to forecast
S - Satisfactory forecast; P plus other times correctly designated as disturbed or quiet, within one grade
H - Storm ($Q \leq 4$) hit, except (M)
(M)- Storm hit, severity underestimated by two grades or a 5 forecast for Q=4 day
M - Storm missed
(O)- Overwarning on observed fair day
O - Other overwarnings
G - Good (quiet) day forecast

Note: See above for scoring legend, scales and symbols; see text for scoring conventions and other information.

Table 83b

Short-Term Forecasts--July 1952



Advance Forecasts (1 to 3/4 days ahead)--July 1952

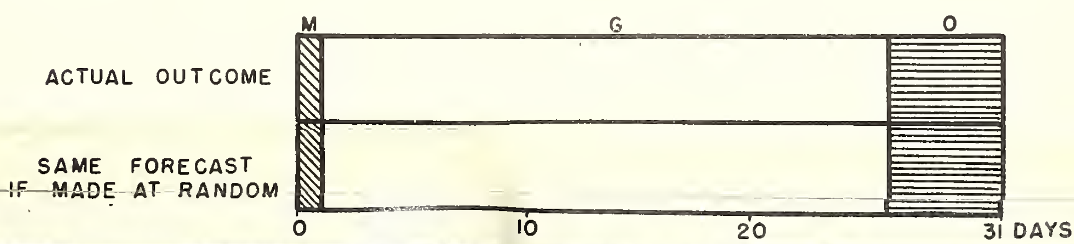


Table 84a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7a	3	3	3	-	-	-	-	-	-	-	-	-	-	-	3	4	6	10	10	6	5	5	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	3	4	6	8	11	10	12	12	9	10	10	7	5	4	4	-	-	-	-	-	-	-	-	-	-	-
4.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	5	7	7	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	8	8	4	-	-	-	-	-	-	X	X	X	X	X	X	X	X	-
6.6a	-	X	X	X	-	-	-	-	-	-	-	-	-	3	15	14	15	9	3	-	8	4	3	-	-	-	-	-	X	X	X	X	X	X	X	X	X
8.9a	X	X	X	X	X	2	3	2	2	-	-	-	3	3	5	6	6	3	2	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	5	6	7	8	6	5	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	-
11.7a	-	X	X	X	X	X	X	X	X	X	-	4	4	4	4	6	5	6	5	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	X	X	X	X	X	X	X	X	X	X	X	X	4	4	6	4	4	5	5	4	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	3	3	3	3	3	5	5	6	7	6	5	7	7	6	4	3	3	-	-	-	-	-	-	-	-	-	-	-
15.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	6	10	10	8	10	12	10	7	4	4	3	3	-	-	-	-	-	-	-	-	-	-
16.7a	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	5	6	6	8	11	9	8	7	-	X	X	X	X	X	X	X	X	X	X	X	X
18.6	-	-	-	-	-	-	-	-	-	-	-	-	3	6	12	16	9	7	6	5	4	5	6	4	3	3	-	-	-	-	-	-	-	-	-	3	3
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	16	14	8	6	6	5	5	4	3	-	-	3	4	3	-	-	-	-	-	-	-	-
22.7a	X	X	X	-	-	-	2	2	2	3	2	2	2	3	3	3	4	4	9	20	12	9	8	8	5	5	4	4	4	X	X	X	X	X	X	X	X
23.6	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	3	6	12	10	7	4	2	1	-	-	2	2	1	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	5	8	12	13	9	6	5	5	4	4	4	4	4	5	4	3	-	-	-	-	X	X
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	7	12	20	15	12	9	6	5	4	3	3	3	4	3	3	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	13	19	18	21	15	18	9	5	4	4	-	X	X	X	X	X	X	X	X	X	X	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	3	5	9	12	14	15	13	12	10	11	9	8	5	4	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	4	5	8	11	13	14	14	10	8	7	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	5	8	12	13	14	13	15	15	10	7	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 85a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7a	2	2	1	-	-	-	-	-	-	-	2	3	3	-	3	8	3	-	3	4	2	-	4	2	-	-	-	2	2	-	-	-	2	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	2	2	3	-	6	10	6	-	-	4	1	2	6	2	2	2	1	-	-	-	-	-	-	-	2	3	2
4.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	5	-	2	7	8	4	2	3	2	-	-	-	-	-	3	-	-	-	-	-	-
5.6a	-	-	-	-	-	-	-	1	1	2	1	-	-	1	3	5	2	-	-	6	9	3	2	1	-	-	1	-	-	-	-	-	-	-	-	-	-
6.6a	-	X	X	X	-	-	-	-	-	-	-	1	1	-	2	6	5	3	-	3	12	11	3	2	2	1	-	-	X	X	X	X	X	X	X	X	X
8.9a	X	X	X	X	X	-	-	-	-	-	-	1	2	4	4	3	7	3	3	2	2	2	3	5	6	5	3	X	X	X	X	X	X	X	X	X	X
9.6a	2	2	2	-	2	-	-	-	-	2	2	2	2	2	3	2	-	2	6	3	2	-	2	3	6	6	4	3	X	X	X	X	X	X	X	X	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3	4	3	3	-	-	-	-	-	-	-	-	-	-
12.7a	X	X	-	-	-	-	-	-	-	-	-	-	1	2	3	2	-	-	-	-	-	-	-	3	4	2	2	-	-	-	-	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	5	3	4	2	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
15.8a	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	9	5	7	7	5	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	2
16.7a	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	5	7	10	8	7	5	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
18.6	2	-	-	-	-	-	-	-	-	3	4	8	12	15	16	15	15	14	9	9	6	4	3	5	5	2	2	3	3	-	-	2	2	3	3	2	-
19.6	-	-	-	-	-	-	-	-	-	-	2	2	5	11	14	19	14	7	8	8	6	5	3	3	3	2	2	1	-	-	-	-	-	-	-	1	2
22.7a	X	X	X	-	-	-	-	-	2	2	3	4	5	9	13	12	10	9	9	11	14	5	1	2	2	2	2	-	-	-	X	X	X	X	X	X	X
23.6	2	1	1	-	-	-	-	-	-	-	1	2	4	7	8	8	8	7	5	7	12	6	2	3	3	2	1	1	-	-	-	1	2	1	1	2	3
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	6	4	15	16	8	9	11	6	3	2	8	5	2	-	-	X	X	X	X	X	X	X
25.6	2	2	1	-	-	-	-	-	-	1	2	3	2	1	3	4	4	12	15	9	1	3	1	1	1	1	3	2	1	-	-	-	1	3	2	1	2
26.6	2	2	2	-	-	-	-	-	-	-	1	1	3	3	2	2	9	12	15	18	18	7	3	4	3	2	X	X	X	X	X	X	X	X	X	X	-
29.7	3	2	-	-	-	-	-	-	1	2	3	4	5	4	3	4	5	4	4	7	9	8	7	2	2	-	-	-	-	-	1	-	-	1	2	2	2
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	4	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	10	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 84b

Coronal observations at Climax, Colorado (5303A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	50	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	8	11	8	5	4	-	4	4	4	4	-	-	-	-	-	-	-	-	-	-	3
3.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	5	7	3	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	-
4.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6a	X	X	X	X	X	X	X	X	X	-	-	-	-	4	5	5	4	-	-	-	-	4	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-
8.9	X	X	X	X	X	X	-	-	4	5	4	3	3	4	6	10	21	15	9	5	4	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
9.6	-	-	-	-	-	-	-	-	2	3	4	3	-	3	4	6	11	20	12	6	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	6	12	13	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	12	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
14.8a	-	X	X	X	-	-	-	-	-	-	4	4	5	5	5	5	5	6	7	6	4	3	3	-	-	-	-	-	X	X	X	X	X	X	X	X	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	5	5	6	9	9	7	5	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18.6	3	3	2	-	-	-	-	-	-	-	-	-	-	3	4	12	19	19	18	18	16	17	15	8	3	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	12	17	16	10	8	11	18	16	10	4	-	-	-	-	-	-	-	-	-	-	-	-
22.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23.6	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	4	4	3	3	5	8	10	10	6	4	4	3	3	4	4	3	3	3	-	-	-	-
24.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	5	6	6	4	4	3	-	-	-	-	3	3	3	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	5	5	4	5	6	4	3	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	3	3	4	4	8	10	10	11	12	9	9	8	7	6	5	4	3	3	2	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	5	5	6	6	5	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	5	8	10	12	14	12	8	6	-	X	X	X	X	X	X	X	X	X	X	-

Table 85b

Coronal observations at Climax, Colorado (6374A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7a	-	-	-	-	-	-	-			-	1	1	2	1	1	-	-	1	2	4	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
3.8a	2	X	X	X	X	X	-			-	-	-	-	-	-	-	1	2	1	3	5	3	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-
4.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6a	-	-	-		-	-	-	-	2	-	-	-	1	1	-	1	1	1	2	3	5	4	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-
6.6a	X	-	-	-	-	-	-	-	-	-	-	2	2	-	2	2	2	3	3	6	7	6	8	4	3	-	-	-	-	-	-	-	-	-	-	-	-
8.9	X	X	X	X	X	X	-	-	-	2	4	4	2	-	-	2	15	12	9	4	6	8	8	9	7	5	4	3	X	X	X	X	X	X	X	X	X
9.6	-	-	-	2	2	-		-	-	2	4	3	3	2	2	3	4	10	16	10	7	5	6	5	4	3	2	2	-	-	-	-	-	2	3	2	2
11.7	-	-	-	-	-	-	-	-	-	3	4	5	4	3	3	3	4	4	12	13	6	6	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	13	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
14.8a	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	X	X	X	X	X	X	X	X	-
15.8	2	3	2	-		-	-	-	-	2	2	2	3	2	2	-	-	-	2	2	3	4	3	2	-	-	2	2	3	2	-	-	-	-	-	-	2
16.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	7	12	2	1	8	3	2	-	-	2	-	-	-	-	-	-	-	-	2	2	2
19.6	2	2	1	-	-	-	1	1	1	1	2	3	2	-	-	10	15	16	2	2	3	5	3	1	-	-	-	-	-	-	-	-	-	2	3	2	-
22.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23.6	3	3	3	2	1	1	1	2	2	3	5	6	5	3	1	1	1	1	1	-	-	-	1	1	1	2	3	6	5	5	4	3	2	1	1	2	2
24.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
25.6	2	4	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	3	5	2	-	2	2	2	-	-	-	-	-	-	-	1	1	2	2
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
29.7	2	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	4	2	3	2	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3
30.7a	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	1	2	1	1	2	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 86a

Coronal observations at Climax, Colorado (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6a	X	X	X	X	-	-	-	-	-	-	-	-	-	1	3	2	1	1	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
8.9a	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7a	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	2	1	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	5	3	2	1	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Yellow Line (5694A): Aug. 26.6, east limb, intensity 4 at N00, 1 at S02.5, 2 at S05.

Table 87a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7	-	-	-	2	2	2	2	2	2	2	2	3	3	4	5	12	11	14	15	16	15	14	16	11	5	3	3	3	3	6	5	4	3	-	-	-	-
3.7	2	2	2	2	2	2	2	2	3	3	3	2	2	8	10	26	32	32	36	38	35	30	32	20	11	5	5	5	5	5	6	5	2	-	-	-	-
4.6	2	2	2	2	2	2	2	2	3	3	3	4	4	4	5	8	13	14	14	16	20	21	20	11	9	4	4	3	2	2	2	2	2	2	2	2	2
5.9a	3	3	4	3	3	4	4	5	5	4	5	5	5	5	4	5	6	8	8	7	8	15	8	5	5	4	4	4	3	5	4	5	5	4	5	5	4
6.7	3	4	4	3	4	4	3	3	5	5	4	4	4	4	5	11	20	21	20	14	8	9	14	5	5	5	4	3	3	3	3	3	3	2	2	2	2
7.9	2	3	3	3	3	3	2	2	3	5	4	4	4	5	6	11	16	20	16	8	3	3	3	3	2	2	2	2	2	2	2	3	3	2	2	2	2
8.8a	2	2	-	-	-	-	-	2	2	2	3	3	2	3	3	4	5	5	7	6	5	5	4	2	2	3	3	2	2	2	2	2	-	-	-	-	-
10.9	-	-	-	-	3	4	4	4	5	8	7	5	4	4	7	8	8	10	13	13	12	11	8	7	5	5	3	2	2	-	-	-	2	2	2	2	2
11.7a	3	4	4	3	3	3	4	5	5	4	3	3	4	4	5	5	5	5	6	6	5	6	4	4	3	3	3	2	2	2	3	3	X	X	X	X	X
12.8	-	-	-	3	4	5	6	7	8	7	7	6	7	8	9	9	10	13	14	11	11	11	11	8	5	6	5	3	2	-	-	-	-	-	-	-	-
15.6	-	2	2	2	2	3	5	6	5	4	3	4	5	5	5	5	14	16	23	22	23	22	20	15	12	7	5	3	3	2	2	2	2	-	-	-	-
16.6	-	-	-	2	2	3	4	5	5	5	5	6	5	5	8	8	8	14	16	15	19	25	16	18	13	10	5	3	3	3	2	2	-	-	-	-	-
17.8	X	X	X	X	X	X	X	4	4	4	4	5	5	5	5	5	8	7	8	10	11	12	11	11	9	8	5	4	3	3	3	3	4	4	3	3	3
18.7a	-	-	2	2	2	2	2	3	3	3	3	3	3	3	4	8	11	18	17	11	5	5	8	5	4	3	2	2	2	3	3	2	2	-	-	-	-
19.8a	-	-	-	-	-	-	2	3	3	4	4	4	4	5	6	11	25	16	11	5	4	3	3	3	3	3	2	3	3	3	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	2	3	3	3	2	2	2	3	8	12	11	9	8	11	12	10	5	3	2	2	2	3	3	3	3	2	2	-	-	-
21.7	-	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	7	6	16	20	16	14	12	8	5	4	3	5	5	5	2	3	2	2	2	2
22.6	2	2	3	3	3	3	3	3	3	4	4	4	4	4	4	4	5	5	8	9	34	16	11	11	8	5	5	4	4	4	5	4	3	3	3	2	2
23.8	-	-	2	2	2	2	2	2	3	3	3	4	5	4	4	4	5	5	6	8	14	22	18	10	8	5	6	5	5	5	4	3	3	3	3	2	2
24.7	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	8	18	18	18	8	5	7	6	4	4	4	3	8	7	7	3	3	3	2	2	2
25.7	-	-	-	-	-	-	-	2	2	3	3	3	3	3	4	5	14	16	23	28	27	11	10	8	5	3	3	3	4	4	5	4	4	3	-	-	-
26.7	2	2	3	3	3	3	2	2	3	3	3	3	3	4	4	5	5	11	14	20	18	16	8	5	4	3	4	5	5	4	5	4	4	4	3	3	2
27.8	2	2	2	2	3	3	3	3	3	2	3	4	4	4	4	4	5	11	14	16	20	20	14	8	5	2	2	3	3	4	3	3	3	2	2	2	2
29.8	3	2	2	3	3	3	2	2	3	3	4	5	4	4	5	6	8	11	14	13	5	6	8	7	5	3	2	3	3	4	3	3	2	2	-	-	-
30.8	2	2	-	-	-	-	2	2	3	3	3	3	3	4	8	13	14	18	23	25	16	11	12	5	5	4	3	3	3	3	3	3	2	2	2	-	-
31.7	2	2	-	-	-	-	2	2	3	3	5	5	5	10	16	22	23	28	28	32	35	23	16	14	11	8	5	4	5	5	6	4	3	2	2	2	2

Table 86b

Coronal observations at Climax, Colorado (6702A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8a	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	-
4.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6a	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
8.9	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	4	3	2	2	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
14.8a	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	1	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 87b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7	-	-	-	-	-	-	-	2	3	5	4	3	3	5	11	16	20	21	15	14	11	7	6	8	9	7	8	7	5	8	8	8	8	5	3	2	-
3.7	-	-	-	-	-	-	2	2	3	6	6	6	4	3	11	20	23	27	32	16	11	8	8	10	10	9	8	9	10	8	8	8	5	4	2	2	2
4.6	2	2	3	2	2	2	3	3	3	4	5	5	4	5	5	8	13	11	12	10	7	5	5	5	4	4	4	3	4	3	4	4	3	3	3	2	2
5.9a	4	4	4	X	X	X	X	X	5	5	5	5	6	5	5	5	5	5	4	5	8	8	8	7	5	4	4	4	4	4	3	3	3	3	4	4	3
6.7	2	3	3	-	-	-	-	2	2	3	4	4	5	5	6	7	8	7	5	4	4	13	11	4	3	3	3	4	4	3	4	4	3	3	3	3	3
7.9	2	2	2	2	2	2	2	2	3	3	3	4	4	3	4	3	3	5	13	11	5	4	4	3	3	2	2	3	3	3	3	3	2	3	2	2	2
8.8	-	-	2	2	2	2	2	2	3	3	3	3	3	3	4	5	8	14	21	12	7	5	2	3	3	2	2	2	3	3	3	2	2	2	2	2	2
10.9	2	-	-	-	-	2	2	3	3	4	6	8	7	6	5	4	5	13	14	15	19	16	5	3	3	4	3	3	3	3	3	2	2	-	-	-	-
11.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	4	4	3	3	3	4	4	4	3
12.8	-	-	-	-	-	2	2	2	3	3	6	5	5	5	6	6	8	11	12	40	41	20	14	11	5	3	3	3	3	3	3	3	2	2	-	-	-
15.6a	-	-	-	-	-	2	2	2	2	2	3	3	3	3	3	4	5	5	6	8	5	4	4	4	3	3	3	3	4	4	3	2	2	2	-	-	-
16.6	-	-	2	2	2	2	2	3	3	3	3	3	4	4	5	14	13	16	20	20	18	16	14	11	5	3	3	3	4	4	2	2	2	2	2	-	-
17.8	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	11	18	30	32	23	26	22	14	8	4	3	3	3	3	4	3	X	X	X	X	X
18.7a	-	-	2	2	2	2	2	2	3	3	3	3	3	4	5	5	28	30	28	23	20	16	22	17	11	8	4	4	5	4	4	3	2	-	-	-	-
19.8a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	5	5	8	10	8	5	6	8	10	8	5	3	3	4	4	4	4	3	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	2	3	3	4	2	2	3	3	7	8	10	11	14	37	32	14	11	8	5	3	3	3	4	3	2	-	-	-	-
21.7	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	4	5	5	6	8	14	25	23	14	11	5	3	3	4	5	5	2	-	-	-	-
22.6	2	2	3	3	3	3	3	3	3	3	3	3	4	4	5	4	4	4	4	4	8	12	13	14	10	8	5	4	3	5	5	6	5	3	2	2	2
23.8	2	2	2	X	X	X	X	3	3	3	3	3	3	4	3	3	3	4	4	5	5	11	10	5	4	3	3	4	4	5	7	7	6	3	2	2	-
24.7	2	-	-	-	-	-	-	-	2	2	2	3	3	3	3	3	3	5	6	13	11	8	9	10	8	5	3	3	4	4	5	6	5	3	2	2	-
25.7	-	-	-	-	-	-	-	-	2	3	3	4	4	6	5	5	6	5	6	6	14	13	11	8	9	5	4	4	5	5	5	6	5	4	3	2	-
26.7a	2	3	3	2	2	2	2	2	2	3	3	4	4	3	3	5	4	5	5	5	5	5	5	5	4	4	4	4	4	3	3	3	3	2	2	2	2
27.8	2	2	2	3	3	3	3	3	5	6	6	5	5	5	6	8	11	11	8	7	5	8	8	8	7	7	5	4	3	3	5	5	6	5	3	2	2
29.8	-	-	-	-	-	-	-	2	3	5	6	7	8	10	13	14	11	11	12	12	11	10	8	8	7	6	6	5	5	4	5	5	4	4	3	3	3
30.8a	-	-	-	-	-	-	-	-	2	2	3	4	3	4	5	8	7	8	10	8	6	8	7	5	6	6	5	5	5	5	4	4	3	3	3	2	2
31.7	2	2	2	2	2	2	2	3	3	3	4	4	4	4	5	6	8	9	14	16	20	28	22	16	14	11	10	8	5	6	5	6	5	3	2	2	2

Table 88a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7	3	4	5	4	4	3	3	2	2	2	3	4	7	5	5	8	11	6	3	7	5	4	14	5	5	5	4	3	3	2	2	3	3	3	2	3	3
3.7	4	3	3	3	3	3	3	2	3	2	3	5	7	8	6	10	14	22	11	3	16	5	14	23	8	8	7	3	3	2	2	2	3	2	3	3	3
4.6	3	2	2	2	3	2	2	3	4	3	2	4	7	5	3	10	8	8	4	5	14	13	7	6	2	3	3	3	2	2	2	3	2	2	3	2	3
5.9a	3	3	-	-	-	-	-	-	-	-	3	3	3	4	3	4	5	7	4	4	5	12	5	5	3	2	3	3	3	3	-	-	-	-	-	-	-
6.7	3	4	3	2	3	3	2	3	3	3	4	5	5	4	3	8	10	12	11	5	6	13	10	4	5	4	3	2	2	2	3	3	3	2	3	3	3
7.9	3	3	2	2	2	2	2	2	2	3	3	4	4	5	5	4	15	14	8	5	5	8	8	7	6	5	5	3	3	2	2	2	2	2	3	2	2
8.8a	2	2	3	3	2	2	2	2	2	2	2	3	3	3	3	3	4	4	5	4	4	4	3	4	4	4	3	3	3	2	2	2	3	3	3	3	3
10.9	4	4	5	5	4	3	3	3	2	2	2	3	4	5	5	4	3	2	3	3	3	3	4	3	3	3	5	4	5	6	3	2	3	4	2	3	2
11.7a	-	3	2	2	2	3	2	2	2	-	-	2	4	4	3	2	3	3	2	3	3	3	3	2	3	2	2	3	3	3	3	X	X	X	X	X	X
12.8	3	3	3	3	3	3	3	2	2	2	2	3	3	2	3	3	3	2	3	3	3	4	3	3	4	4	4	4	3	2	3	3	2	2	2	3	3
15.6	3	3	4	3	3	2	3	2	2	2	3	4	3	4	5	2	5	16	12	13	12	5	2	-	-	2	-	2	3	4	3	3	2	2	3	3	3
16.6	2	2	2	2	2	2	2	2	2	3	3	4	4	5	2	3	3	5	8	12	8	9	8	6	3	3	3	2	3	4	2	2	2	2	2	3	3
17.8	X	X	X	X	X	X	X	3	3	3	3	3	3	3	4	4	8	7	7	7	7	5	4	7	8	6	3	3	3	4	4	4	4	5	4	5	5
18.7a	2	3	3	3	3	2	3	3	2	2	3	5	6	8	10	12	14	11	11	8	10	8	5	4	5	6	3	3	4	4	4	4	3	2	2	2	3
19.8a	4	3	3	3	3	3	3	4	4	4	4	4	4	4	5	8	14	13	10	8	4	4	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-
20.6	4	3	3	2	3	3	2	3	3	4	5	8	5	5	6	8	16	12	11	12	13	8	5	3	5	4	3	3	2	3	2	2	3	2	3	2	2
21.7	3	3	3	3	2	3	2	2	2	3	4	5	6	5	8	15	18	16	13	11	20	5	4	2	2	2	2	2	2	3	3	2	2	2	2	2	3
22.6	3	3	4	4	3	3	3	2	2	3	3	5	6	5	6	8	10	9	8	7	18	8	4	4	4	3	3	3	4	2	3	3	2	2	3	3	3
23.8	3	3	2	4	3	3	2	2	2	2	3	3	3	6	9	8	7	8	8	8	8	16	16	4	5	5	10	11	4	3	2	3	3	2	2	3	3
24.7	3	5	4	4	3	4	3	3	2	3	3	4	3	4	6	8	7	5	15	10	10	14	6	5	3	8	7	4	3	4	3	3	3	3	2	2	2
25.7	2	3	4	3	4	4	3	4	2	3	4	5	5	4	4	4	4	8	14	16	16	5	8	5	4	3	4	5	4	4	3	2	2	3	3	3	2
26.7	3	4	4	3	3	3	4	4	3	3	4	4	4	4	4	4	4	5	13	15	18	20	11	5	3	2	3	4	3	3	3	3	2	2	2	2	3
27.8	2	2	2	3	3	2	2	3	3	2	3	3	4	4	5	3	3	8	11	16	20	32	23	5	2	3	2	2	2	2	2	2	2	2	2	2	3
29.8	3	3	4	3	3	3	2	2	2	3	4	4	4	3	4	5	4	4	5	4	5	7	6	5	3	3	4	2	2	2	2	3	2	-	-	2	2
30.8	3	2	3	2	3	3	2	2	2	3	4	5	3	3	3	3	3	3	4	3	3	3	4	3	2	4	3	3	3	2	2	2	2	2	2	2	2
31.7	3	4	3	4	3	4	2	3	3	2	3	3	5	4	3	4	2	3	5	7	25	10	11	5	5	9	7	8	5	3	2	3	3	2	2	2	2

Table 89a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	4	4	4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	4	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-
5.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-
17.8	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	4	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-
19.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	4	4	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	4	5	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	3	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	4	3	4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	3	4	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-

Note: Yellow Line (5694A): ' 26.7 at S05, east limb, intensity 4.

Table 88b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7	3	3	3	3	2	3	3	2	3	3	4	5	5	3	2	3	3	5	7	10	8	5	3	2	2	2	2	2	2	2	3	2	2	3	2	3	3
3.7	3	3	4	4	3	3	2	2	3	3	4	5	4	4	3	5	5	3	10	7	12	11	7	4	4	3	3	3	3	2	2	3	2	3	3	4	4
4.6	3	3	3	2	2	2	2	2	2	2	3	2	3	3	4	4	3	3	5	4	4	5	3	4	4	3	2	2	2	2	3	2	2	3	2	3	3
5.9a	-	-	-	X	X	X	X	3	3	3	4	4	4	4	4	4	4	4	4	7	7	8	11	5	5	4	5	4	3	3	3	3	2	2	3	3	3
6.7	3	3	2	2	3	3	2	2	3	3	3	5	5	5	4	3	5	5	8	12	15	16	11	11	10	8	5	4	3	2	2	2	2	2	3	3	3
7.9	2	2	2	3	2	2	2	2	4	5	3	4	5	4	3	3	5	8	7	7	8	11	13	12	8	7	7	5	3	2	2	2	2	3	3	3	3
8.8	3	2	3	2	3	2	3	2	2	3	2	2	3	3	2	3	2	8	13	10	5	4	8	11	8	5	4	4	2	2	-	-	-	-	-	-	2
10.9	2	3	4	4	4	3	3	2	2	2	2	3	6	7	6	3	5	7	6	13	14	8	9	6	5	5	2	3	4	4	3	3	3	2	3	3	4
11.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
12.8	3	2	3	2	3	3	2	2	2	2	3	3	3	4	3	2	2	2	12	32	32	30	2	2	5	5	4	3	3	3	2	2	2	3	3	3	3
15.6a	3	2	2	3	3	3	3	2	2	3	4	5	2	2	3	2	2	3	3	4	3	4	4	3	3	3	8	4	3	2	2	2	3	2	4	4	3
16.6	3	3	3	4	3	3	3	3	2	2	2	2	5	5	3	3	2	3	2	4	11	5	4	3	4	5	8	6	5	3	2	2	3	3	3	2	2
17.8	5	4	4	4	4	4	3	3	4	4	4	4	4	3	3	3	5	8	4	4	8	10	6	2	2	2	3	3	4	2	2	X	X	X	X	X	X
18.7a	3	3	3	3	3	3	3	3	2	4	3	4	4	3	2	2	3	5	6	3	4	9	6	3	2	2	5	4	3	2	-	3	2	2	3	3	2
19.8a	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	8	10	11	8	5	4	4	4	5	4	2	2	2	2	3	2	2	2	3	5	4
20.6a	2	3	3	3	2	3	3	3	3	5	7	8	5	5	4	8	15	13	12	12	10	11	13	5	3	2	2	2	2	3	2	2	3	3	3	4	4
21.7	3	2	3	4	3	2	3	2	3	3	8	8	7	6	5	5	6	8	8	11	10	15	14	16	3	5	4	4	3	2	2	2	2	3	3	3	3
22.6	3	4	3	5	3	4	2	2	3	3	4	5	4	4	3	2	3	3	4	3	7	6	11	5	6	6	4	3	2	2	2	2	3	3	3	3	3
23.8	3	2	X	X	X	X	2	2	3	3	4	5	4	4	5	3	2	2	3	5	3	3	4	4	3	7	4	3	3	2	2	2	3	3	3	4	3
24.7	2	3	3	3	4	2	2	3	3	3	3	4	3	3	4	2	2	2	3	11	8	5	6	4	3	3	2	2	2	2	2	2	2	3	3	3	3
25.7	2	3	3	4	4	3	2	2	2	3	4	4	2	3	3	3	2	2	3	8	13	2	2	3	5	5	3	2	2	2	2	2	3	4	3	3	2
26.7a	3	3	4	4	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	3	3	3	4	3	3	3	3	3	2	3	2	2	3	3	2	3
27.8	3	2	2	3	2	2	2	3	3	3	4	4	2	2	3	3	2	3	3	3	2	3	3	3	3	3	2	3	2	2	2	2	2	2	2	3	2
29.8	2	3	2	3	3	3	3	3	4	4	5	4	3	3	2	3	3	4	7	4	3	4	4	2	3	3	3	3	2	2	-	-	2	2	3	3	3
30.8a	2	2	2	2	2	3	3	3	2	3	5	4	3	3	3	2	2	3	5	5	4	3	4	4	3	3	3	2	2	2	2	3	2	2	2	2	3
31.7	2	3	4	3	3	3	2	3	3	4	4	3	4	5	5	3	3	3	3	8	5	8	5	7	6	2	3	4	4	2	2	2	3	3	3	4	3

Table 89b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Aug. 2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	3	3	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	4	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
17.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	3	2	2	2	-	-	-	-	X	X	X	X	X	X
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	4	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-

Table 90

Zürich Provisional Relative Sunspot Numbers

August 1952

Date	R_Z^*	Date	R_Z^*
1	62	17	50
2	42	18	43
3	35	19	30
4	44	20	22
5	46	21	28
6	43	22	30
7	51	23	54
8	49	24	69
9	57	25	84
10	59	26	74
11	43	27	90
12	54	28	85
13	66	29	89
14	50	30	83
15	44	31	85
16	45	Mean:	55.0

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 91

American Relative Sunspot Numbers

July 1952

Date	R_A '*	Date	R_A '*
1	47	17	47
2	46	18	33
3	37	19	28
4	31	20	32
5	21	21	19
6	20	22	10
7	18	23	11
8	31	24	10
9	44	25	19
10	56	26	13
11	59	27	23
12	60	28	25
13	69	29	27
14	89	30	33
15	139	31	52
16	74	Mean:	39.4

*Combination of reports from 28 observers; see page 10.

Table 92

Solar Flares, July 1952

Observatory	Date 1952	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) of (Visible) (Hemisph)	Position Latitude (Deg)	Position Longitude Diff (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed *
Wendelst.	Jul.12	0610				N10	E30	-			-	
Sac.Peak	12	1450	1530	40	252	N14	E31	1455	20	5	2	1454
McMath	12	1505B	-			N12	E35	-			1	"
Sac.Peak	12	1524	1538	14	63	S05	E31	1528	13	6	1-	
McMath	12	1526				S03	E37	-			1	
Sac.Peak	13	1415	1424	9	23	S05	E31	1421	11	8	1-	
"	13	1430	1446	16	26	N10	E11	1435	10	6	1-	
"	15	1455B	1520	-	78	N15	E76	1455B	10	9	1-	
"	16	1415	1430	15	40	S06	W20	1423	9	7	1-	
"	16	1440	1535	55	149	S04	W17	1450	17	4	2	1448
Sac.Peak	16	1605	1637	32	46	S08	E04	1625	7	5	1-	
"	16	1631	1735	64	160	S03	W12	1644	15	1	1	
"	16	1735	1740	5	12	S06	W20	1737	7	8	1-	
"	16	1805	1905	60	160	S04	W20	1810	19	2	2	1807
"	16	2110	2120	20	32	N14	W30	2114	8	6	1-	
Sac.Peak	16	2205	2220	15	20	S03	W22	2209	7	8	1-	
"	16	2335	2350	15	63	S03	W22	2340	8	2	1-	
"	17	1455	1525	30	67	S03	W32	1514	10	6	1-	
McMath	17	1500				S04	W31	-			1	
Sac.Peak	17	2020	2029	9	25	S03	W32	2026	9	5	1-	
"	18	1650	1656	6	15	N10	W62	1651	10	9	1-	
"	24	1405	1425	20	25	N11	W76	1415	9	5	1-	
"	24	1515	1521	6	25	N11	W76	1518	8	5	1-	
"	24	1521	1526	5	35	N11	W76	1524	12	4	1-	
McMath	28	1635				S09	E68	-			1	1635
Sac.Peak	30	1630	1640	10	39	S11	E37	1635	13	7	1-	
Schauins.	31	0550	0600	10		S10	E20	-			-	
McMath	31	1250				S09	E22	-			1-	
"	31	1315				S09	E22	-			1-	
Sac.Peak	31	1350	1414	24	46	S07	E76	1352Q	15	9	1-	1350

Sac.Peak = Sacramento Peak
Wendelst. = Wendelstein
Schauins. = Schauinsland

B Flare started before given time.
A Flare ended after given time.
Q Time reported as questionable.

* Beginning time of associated SID.

Indices of Geomagnetic Activity for July 1952

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1952	C	Values Kp three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	0.9	1+	1+	1+	1+	1+	1-	5-	6o	18o	Five
2	0.3	3-	2+	2-	3o	1+	1+	1o	2-	15o	Quiet
3	0.6	2o	2o	2-	2-	3+	4-	3o	2+	20-	
4	0.5	2o	3-	2+	2+	3-	3+	1o	2o	18+	2
5	1.6	3o	5o	5+	5o	6-	6-	6+	5-	41-	19
											28
6	1.1	3o	5-	6+	4-	3o	2o	2o	2o	27-	29
7	0.4	3-	2o	3o	2+	2-	3-	2-	1-	17-	30
8	0.5	1-	2-	2+	2o	4o	3o	2o	3-	18+	
9	1.0	3o	3-	4o	5o	3+	4o	3+	3o	28+	
10	1.0	2+	4-	3+	4-	3+	5-	4o	3+	28+	
11	0.6	4-	4o	4-	2-	2+	2o	2o	1-	20o	Five
12	0.2	2+	2+	3-	3o	2o	1-	1o	2+	16+	Disturbed
13	0.6	1+	2o	1+	2o	3-	4-	3-	1+	17o	
14	0.7	3o	3o	3-	3-	3o	4-	2o	3o	23o	5
15	0.7	3o	4o	3-	3+	3-	3o	2+	3+	24+	6
											9
16	[illegible]	2+	3-	3-	2o	3-	2-	2o	1+	17+	20
17	0.4	1-	2+	2+	2-	2-	2+	2+	3-	16o	21
18	0.4	2-	3-	2-	2+	3-	2-	2-	2o	16+	
19	0.1	1+	1-	1-	1+	2o	1o	2o	2o	11o	
20	[illegible]	2+	2+	2+	6-	5+	4+	4+	5o	32-	
21	1.4	4o	6-	5o	5o	6o	5o	4+	4+	39+	Ten
22	0.9	[illegible]	3o	3o	3+	3o	[illegible]	5+	4-	25-	Quiet
23	0.7	3-	2+	3-	2o	2o	3-	2o	3+	20-	
24	0.6	3o	2-	1o	2+	2o	3o	3-	3-	18+	2
25	0.7	1+	1+	2-	2+	3-	3+	3o	3o	19-	7
											12
26	0.8	4-	3+	3o	2+	2+	2-	1o	1+	19-	16
27	0.7	2+	0+	1-	1o	2o	2o	2-	4+	14+	17
28	0.2	2o	2-	2-	1o	1-	1o	2o	0+	10+	18
29	0.0	0o	0+	0+	0+	1-	1-	1+	1o	5-	19
30	0.0	1o	0+	0+	1o	1-	0+	1-	1+	6-	28
31	0.8	2+	2-	4+	4o	4-	3+	3o	2o	24+	29
											30
Mean	0.65										

Table 94

Sudden Ionosphere Disturbances Observed at Washington, D. C.

August 1952

1952 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
August					
29	2105	2120	Ohio, D. C., Mexico, North Dakota	0.1	

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant.

Table 95

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1952 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
July 16	0915	1000	Brentwood	Austria, Belgian Congo, Bulgaria, Greece, New York, Palestine, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R.
16	0920	0930	Somerton	India

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

GRAPHS OF IONOSPHERIC DATA

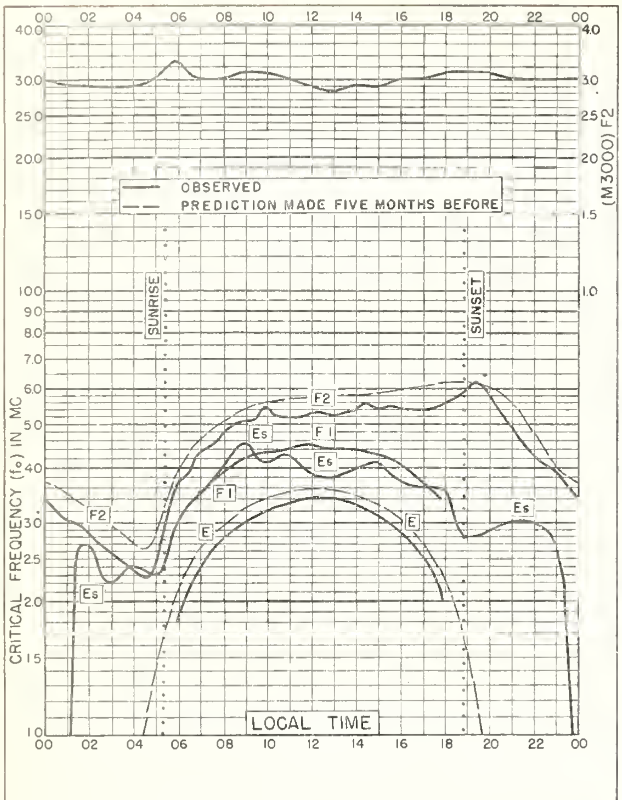


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W AUGUST 1952

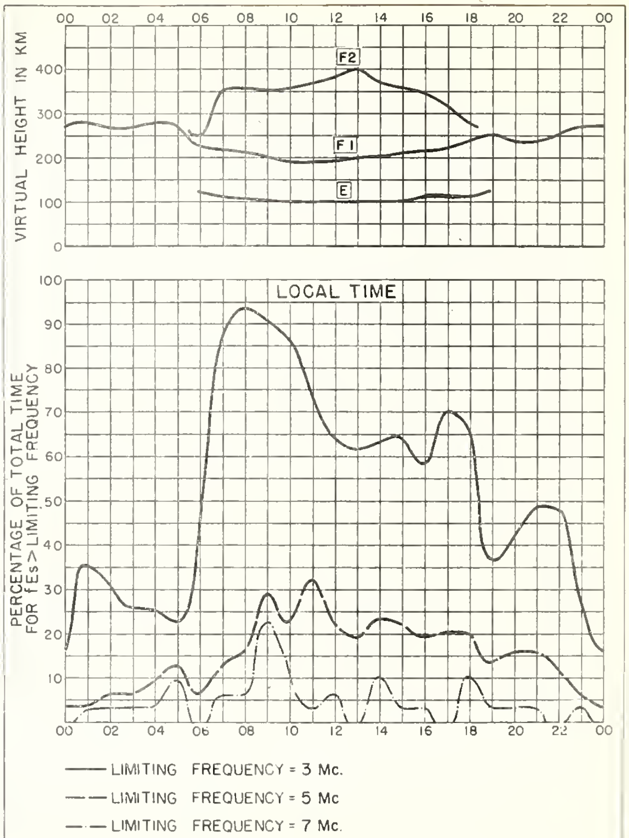


Fig. 2. WASHINGTON, D.C. AUGUST 1952

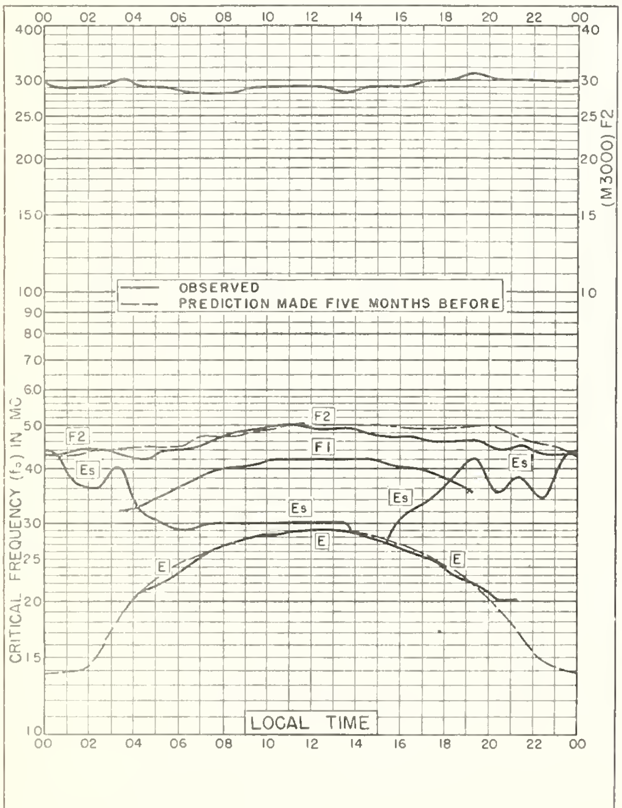
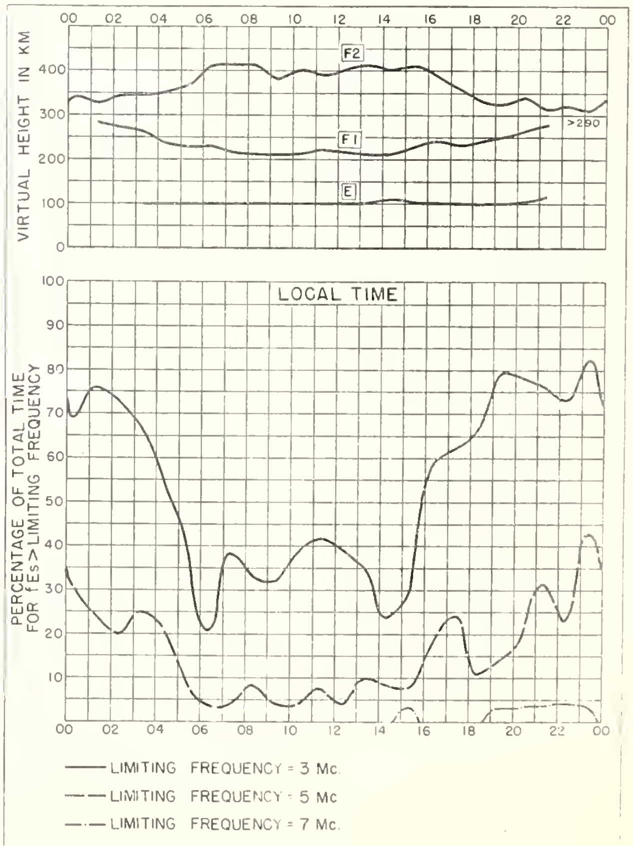


Fig. 3. TROMSO, NORWAY



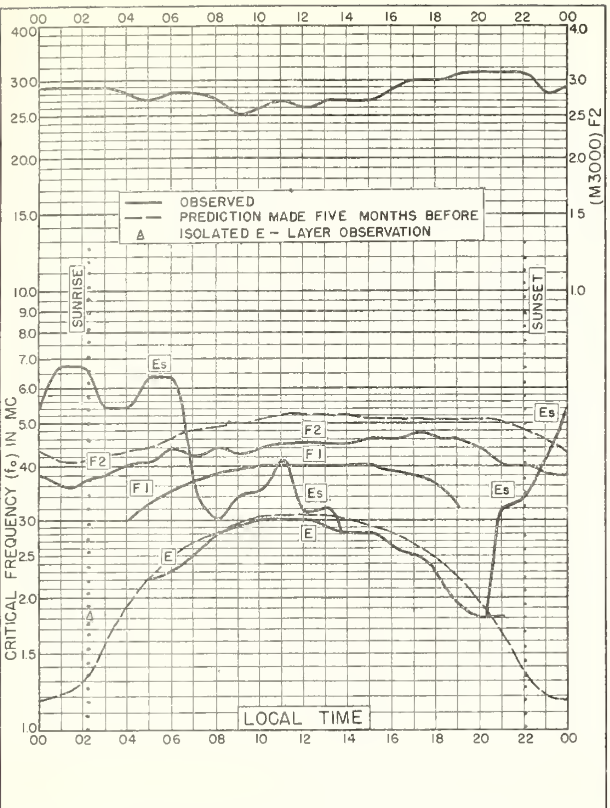
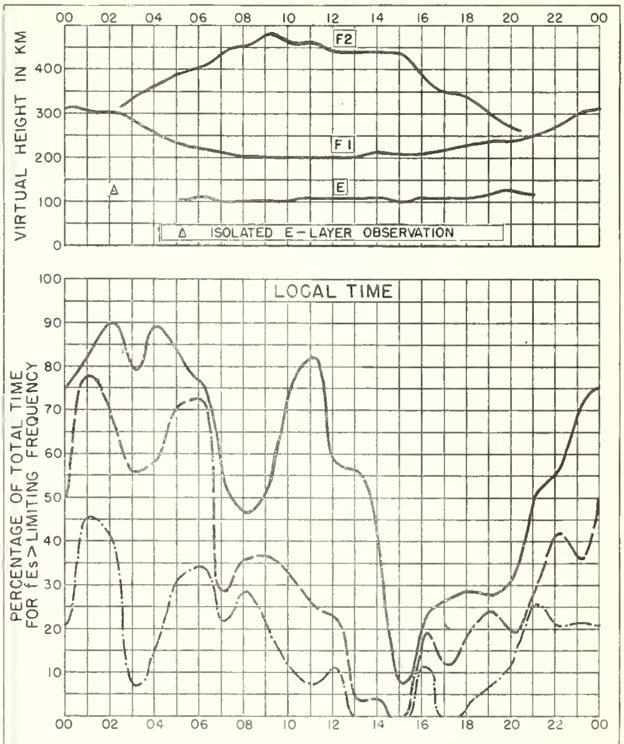


Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W JULY 1952



LIMITING FREQUENCY = 3 Mc.
LIMITING FREQUENCY = 5 Mc
LIMITING FREQUENCY = 7 Mc.

Fig. 6. FAIRBANKS, ALASKA JULY 1952

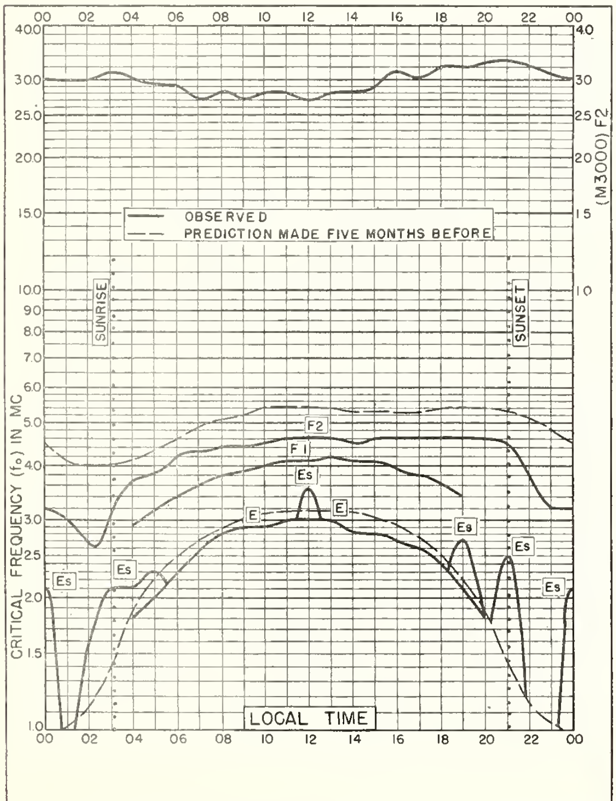
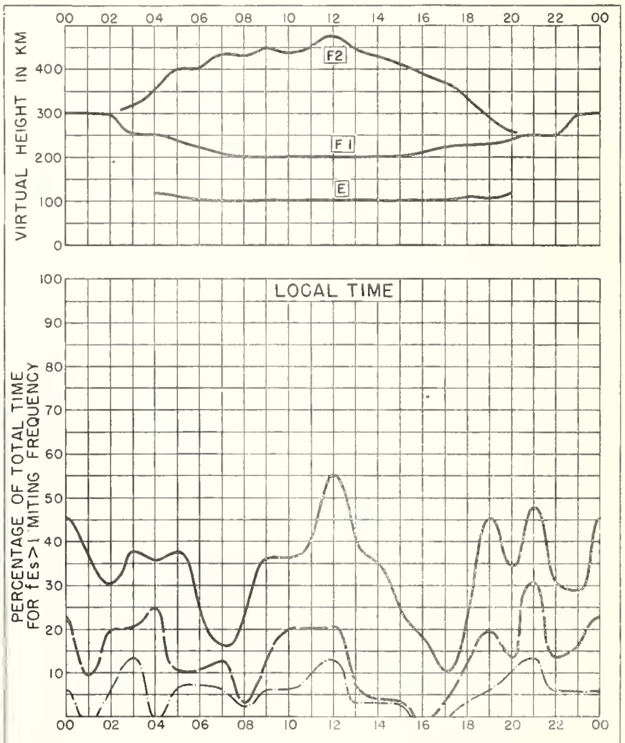


Fig. 7. ANCHORAGE, ALASKA
61.2°N, 149.9°W JULY 1952



LIMITING FREQUENCY = 3 Mc.
LIMITING FREQUENCY = 5 Mc
LIMITING FREQUENCY = 7 Mc.

Fig. 8. ANCHORAGE, ALASKA JULY 1952

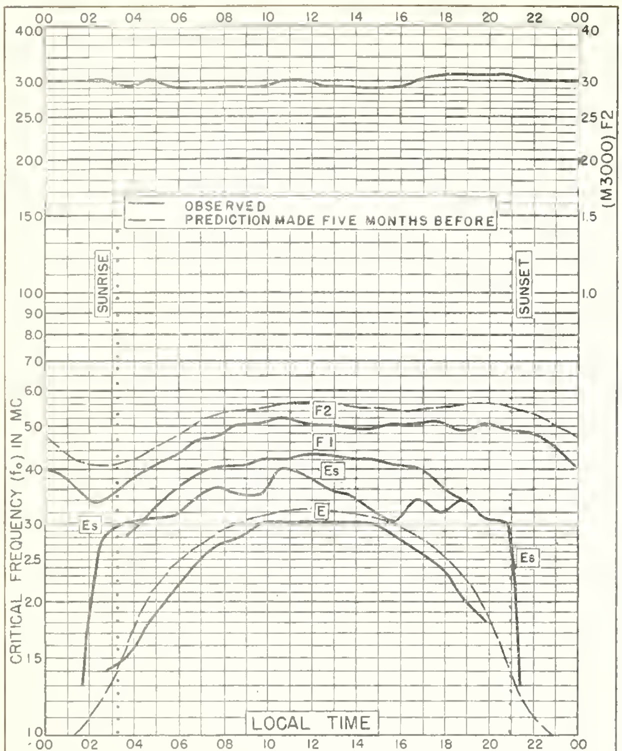


Fig. 9. OSLO, NORWAY
60.0°N, 11.1°E JULY 1952

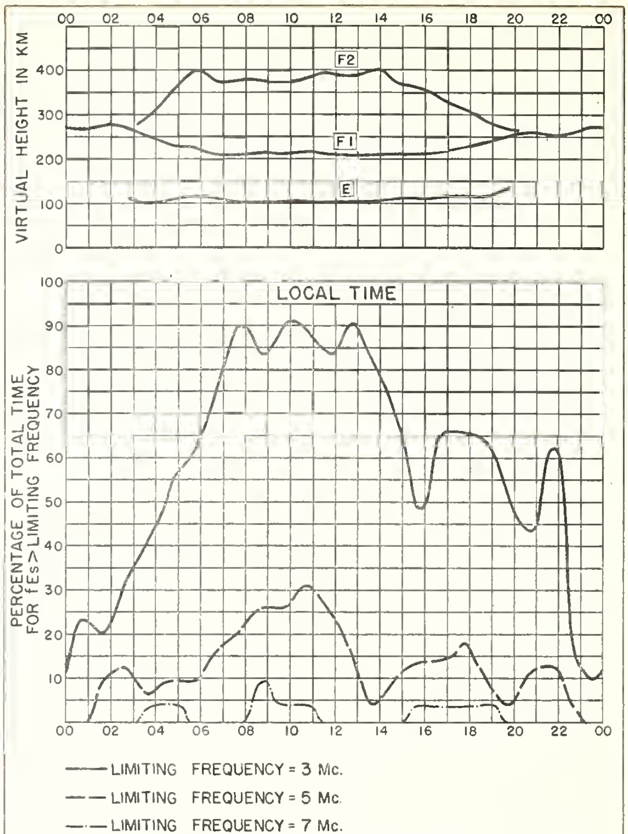


Fig. 10. OSLO, NORWAY JULY 1952

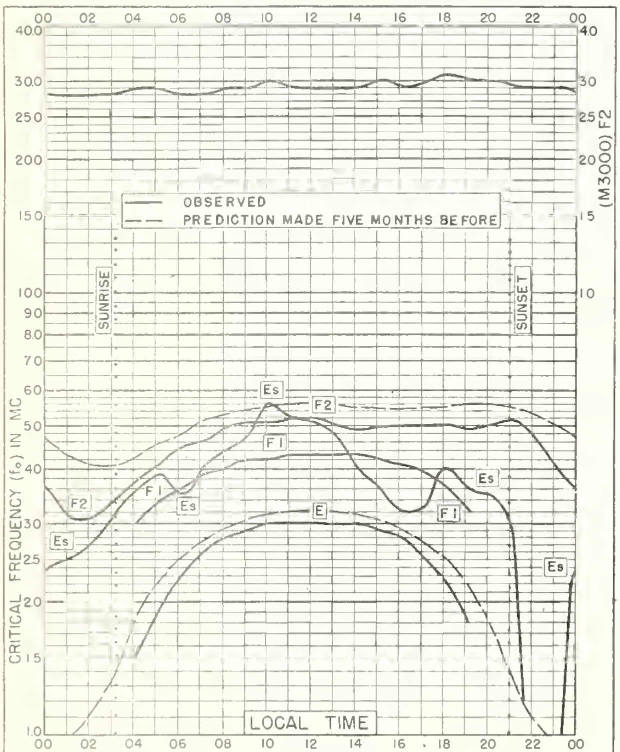


Fig. 11. UPSALA, SWEDEN
59.8°N, 17.6°E JULY 1952

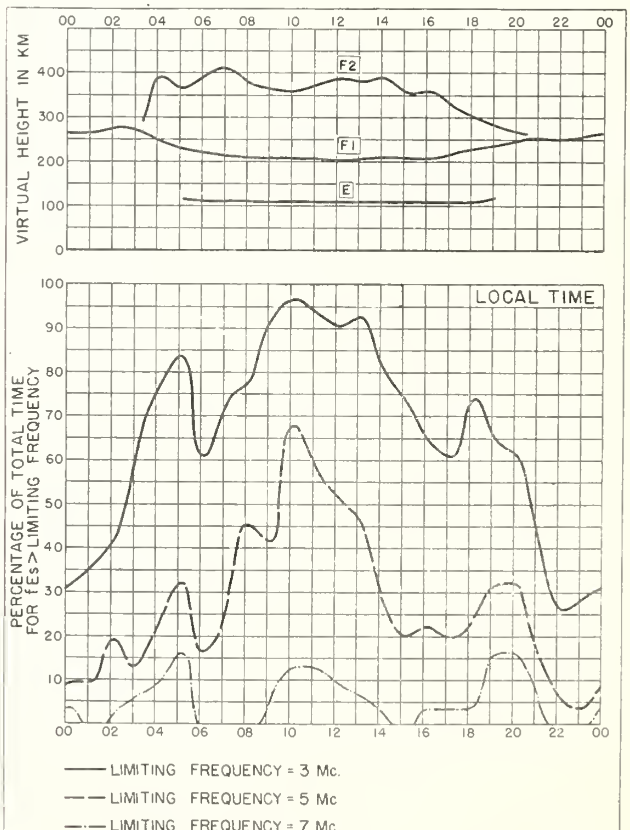


Fig. 12. UPSALA, SWEDEN JULY 1952

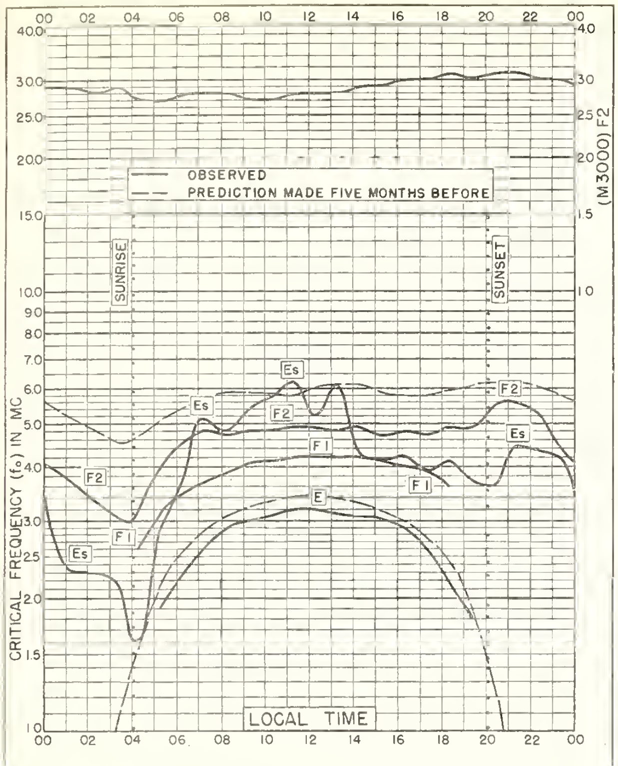


Fig. 13. ADAK, ALASKA 51.9°N, 176.6°W JULY 1952

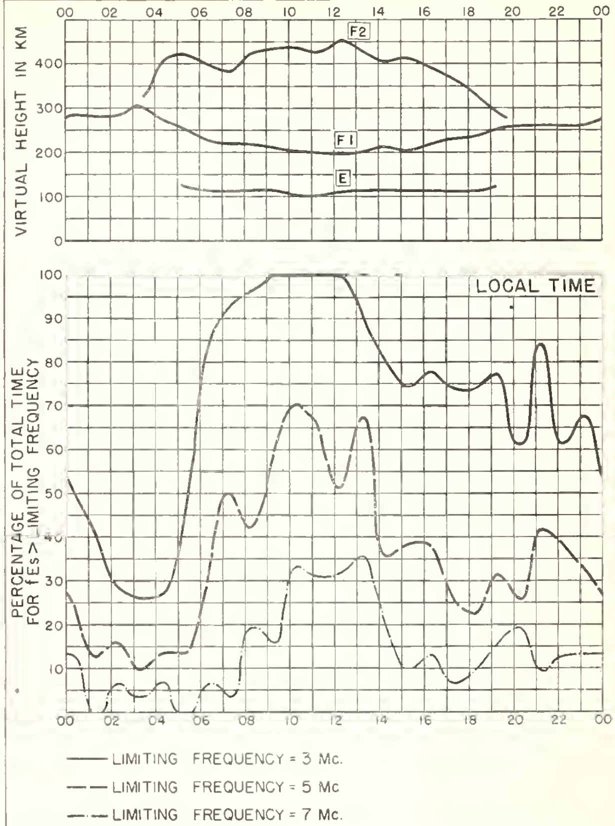


Fig. 14 ADAK, ALASKA JULY 1952

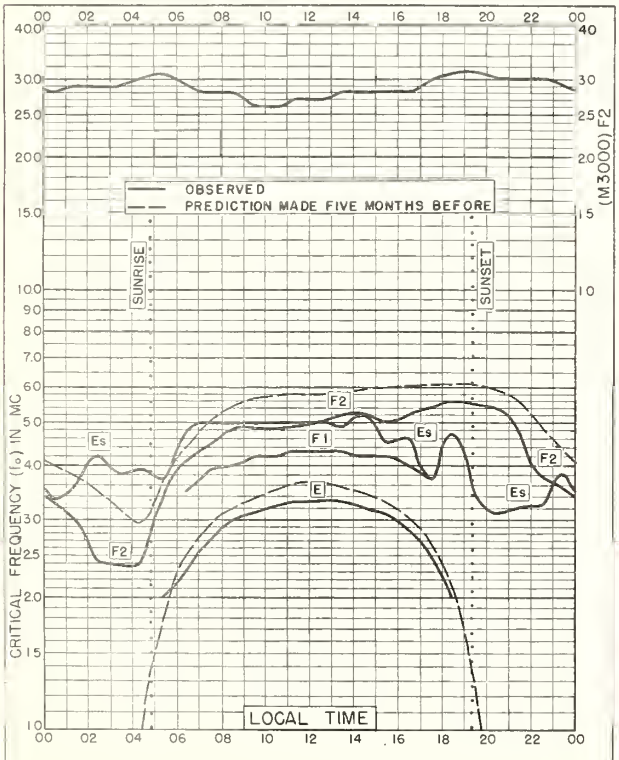


Fig. 15. BATAVIA, OHIO 39.1°N, 84.1°W JULY 1952

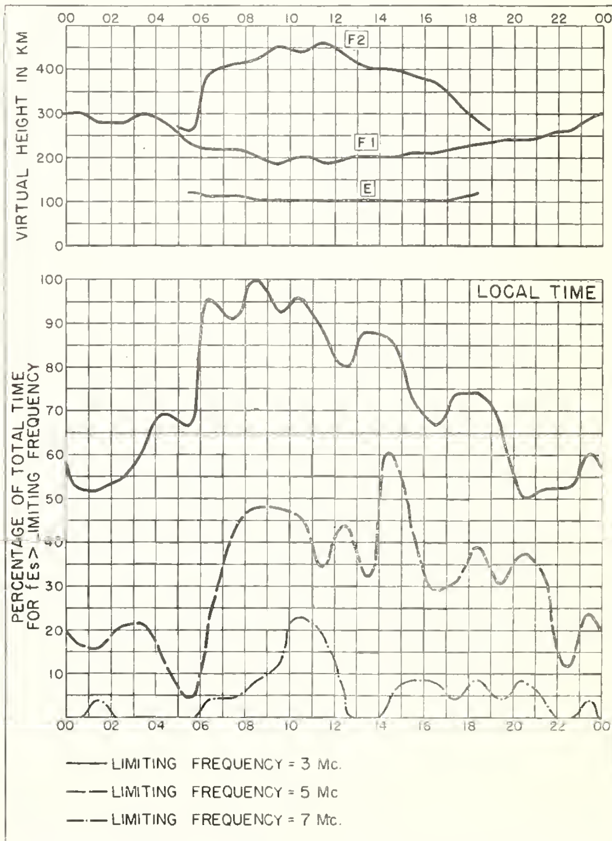


Fig. 16. BATAVIA, OHIO JULY 1952

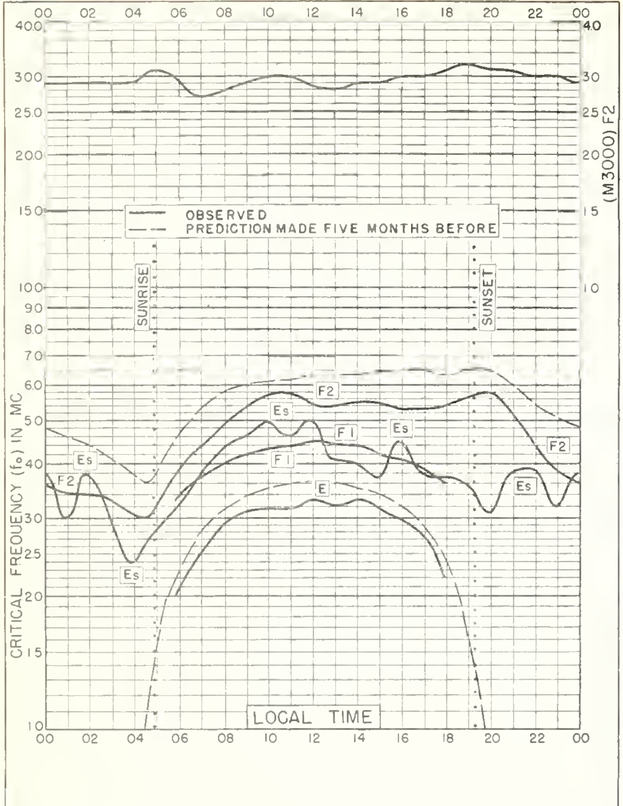


Fig. 17. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JULY 1952

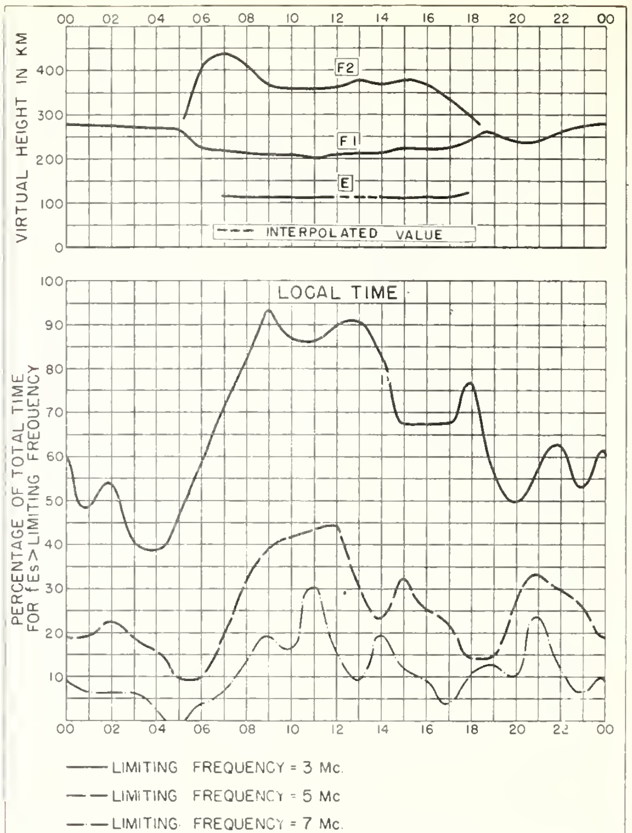


Fig. 18. SAN FRANCISCO, CALIFORNIA JULY 1952

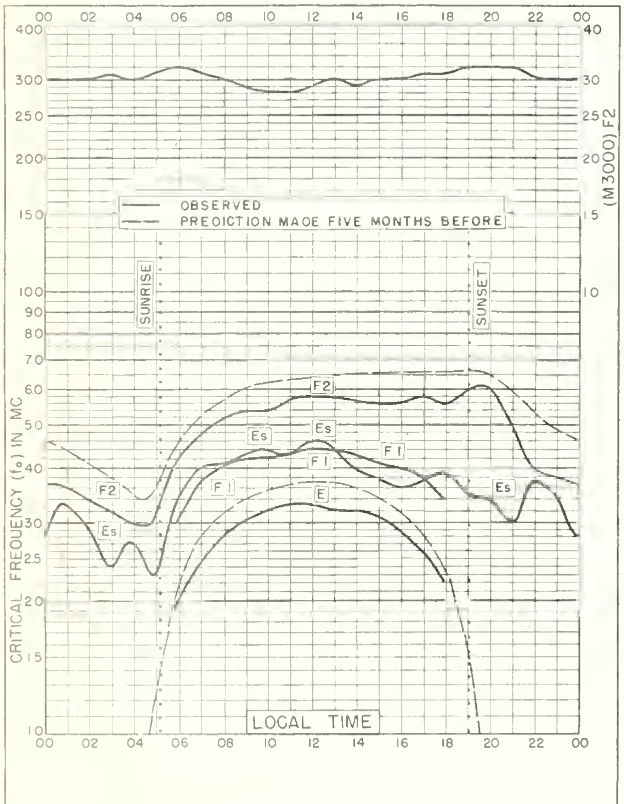


Fig. 19. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JULY 1952

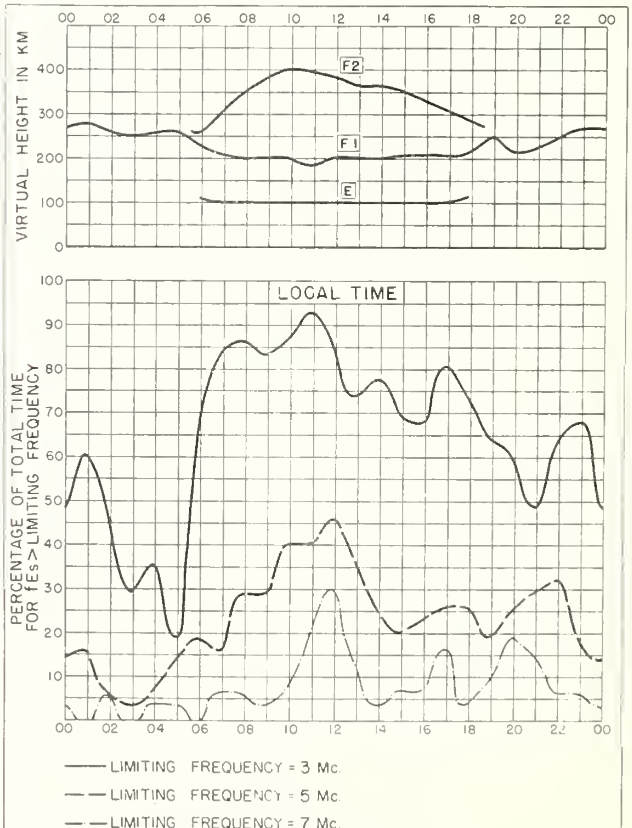


Fig. 20. WHITE SANDS, NEW MEXICO JULY 1952

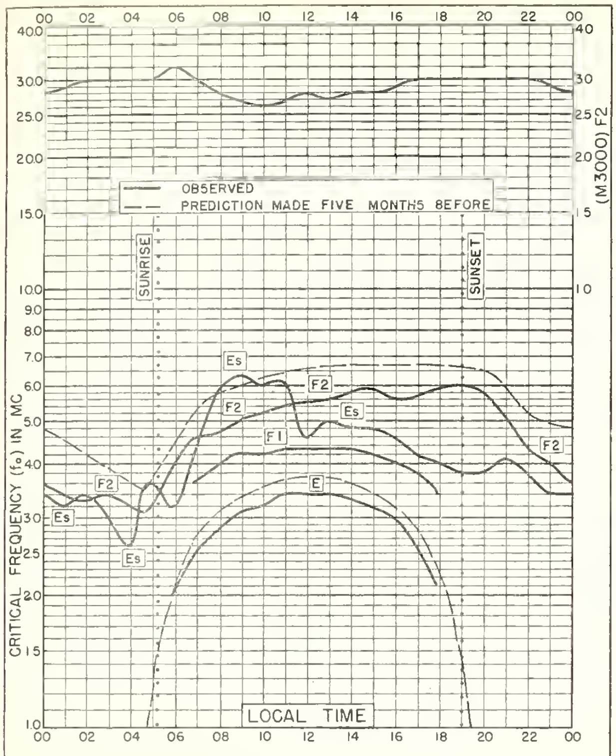


Fig. 21. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W JULY 1952

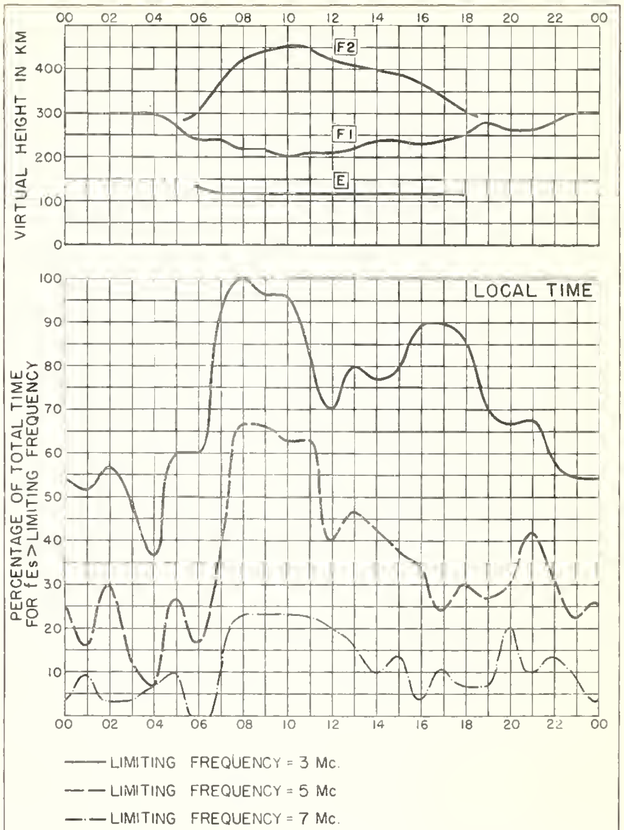


Fig. 22. BATON ROUGE, LOUISIANA JULY 1952

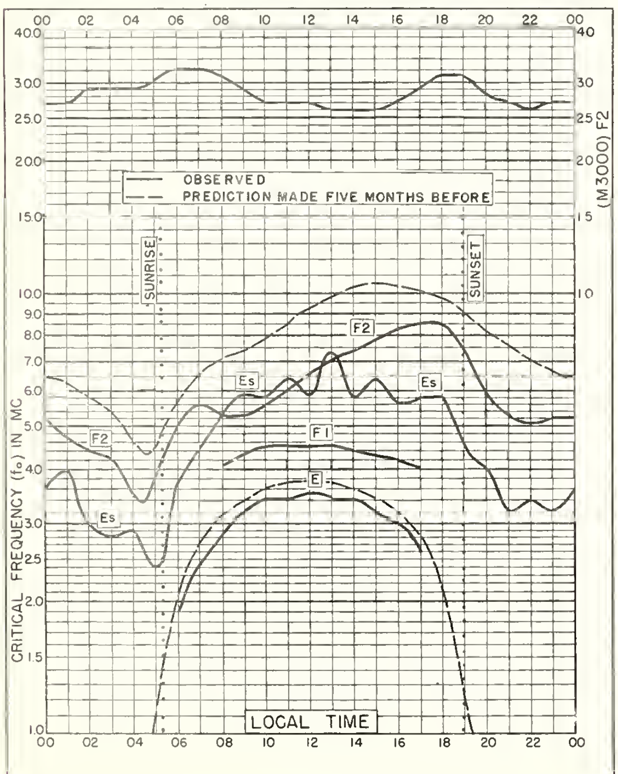


Fig. 23. OKINAWA I.
26.3°N, 127.8°E JULY 1952

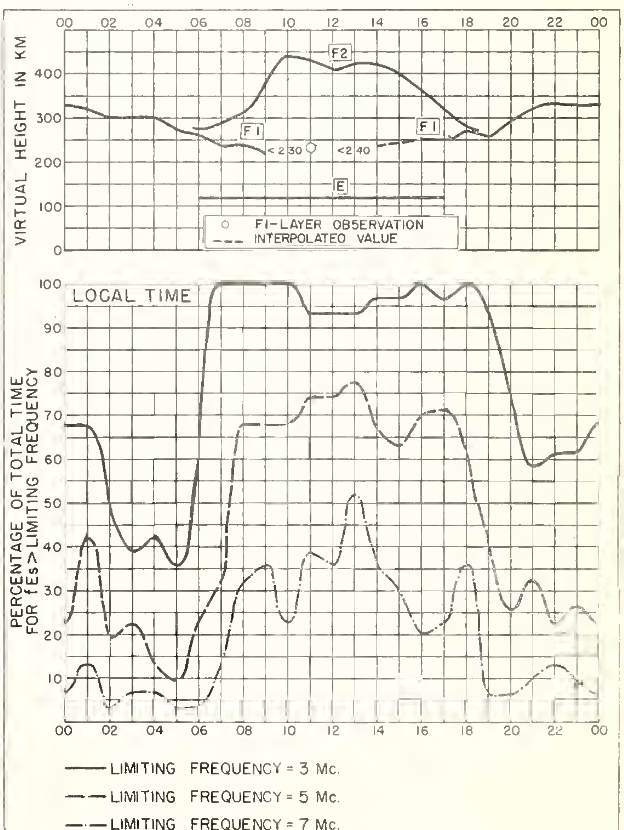


Fig. 24. OKINAWA I. JULY 1952

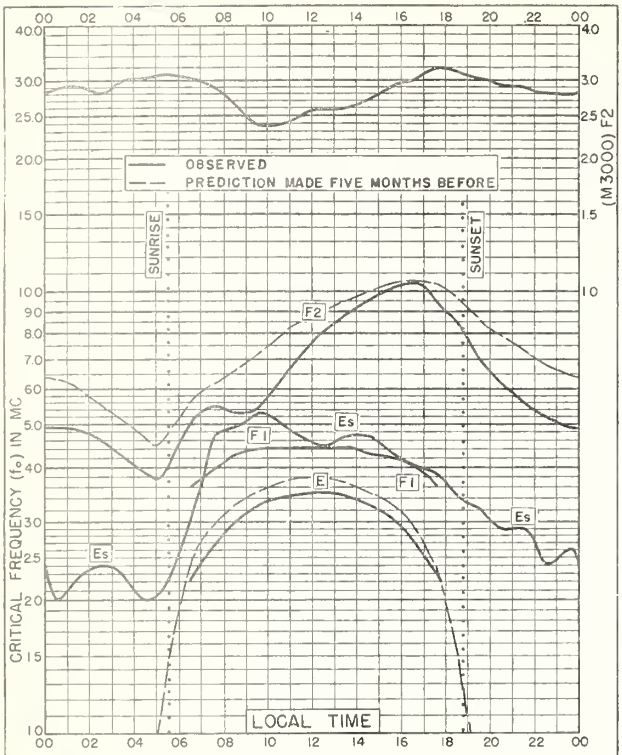


Fig. 25. MAUI, HAWAII
20.8°N, 156. 5°W JULY 1952

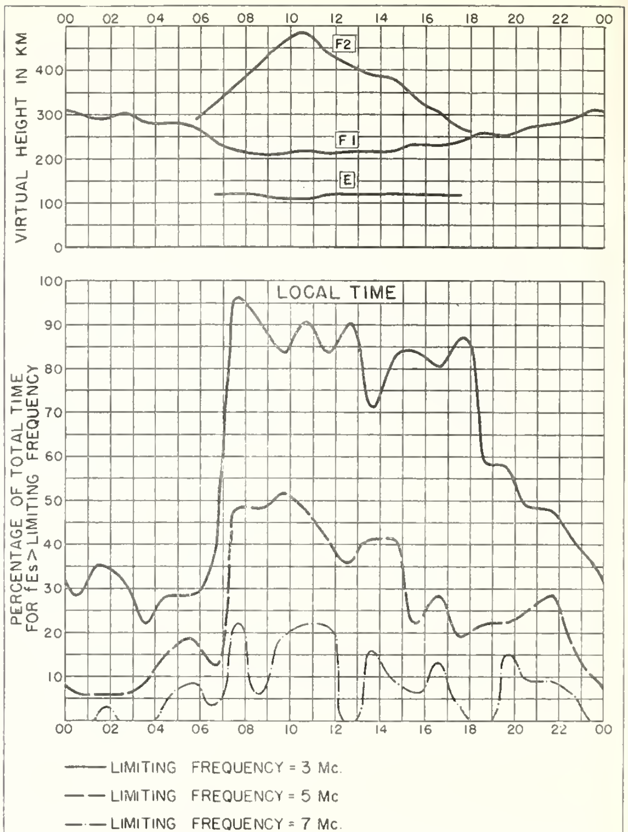


Fig. 26. MAUI, HAWAII JULY 1952

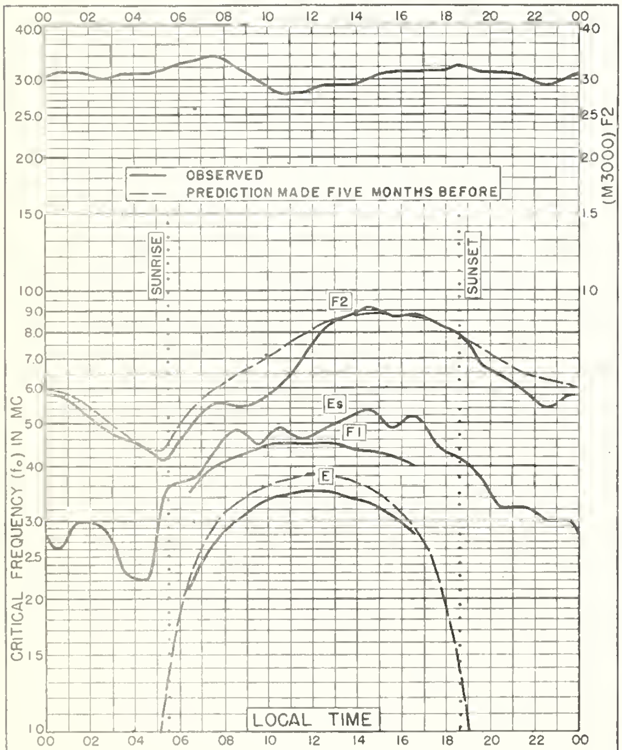


Fig. 27 PUERTO RIOO, W.I.
18.5°N, 67.2°W JULY 1952

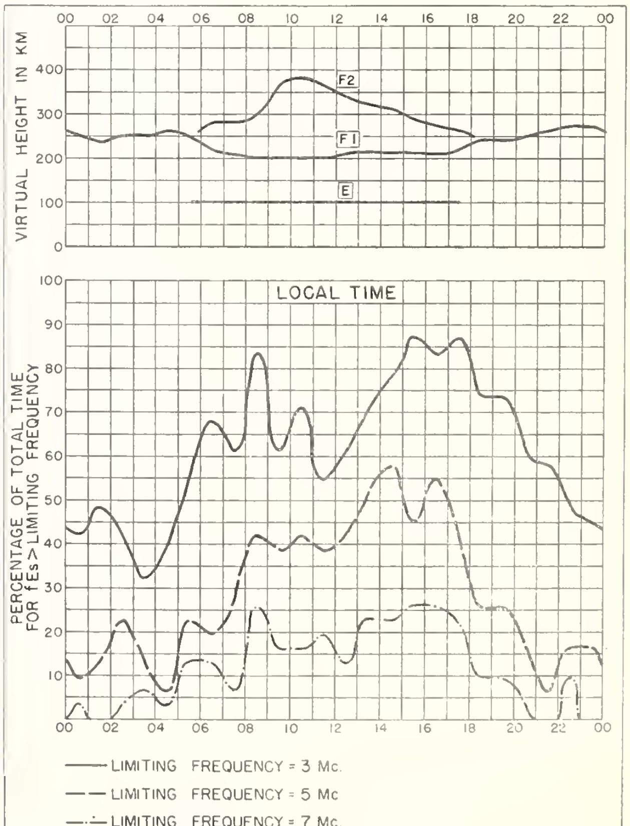


Fig. 28. PUERTO RICO, W.I. JULY 1952

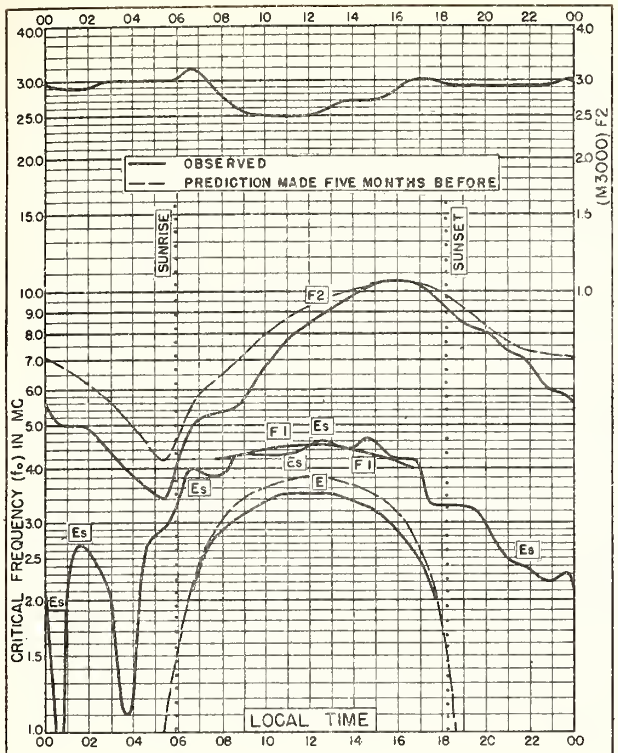


Fig. 29. PANAMA CANAL ZONE
9.4°N, 79.9°W JULY 1952

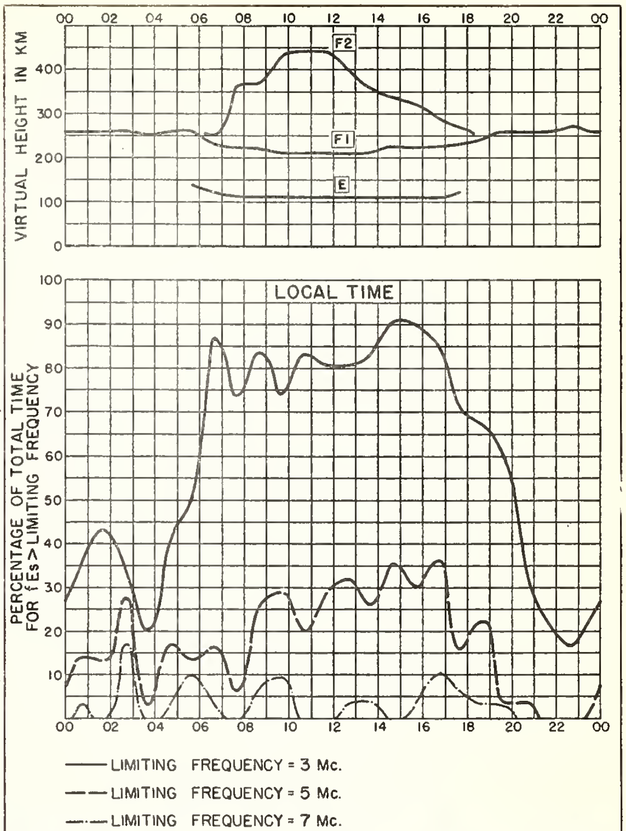


Fig. 30. PANAMA CANAL ZONE JULY 1952

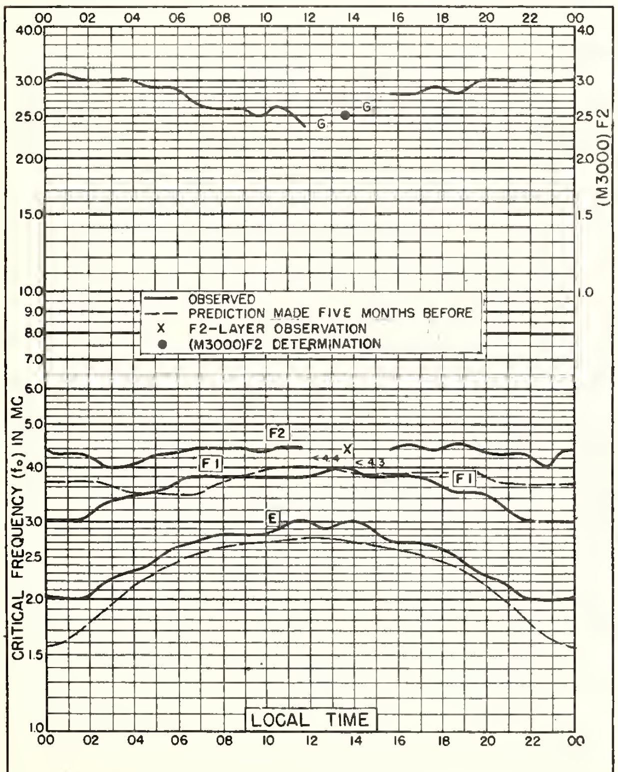


Fig. 31. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JUNE 1952

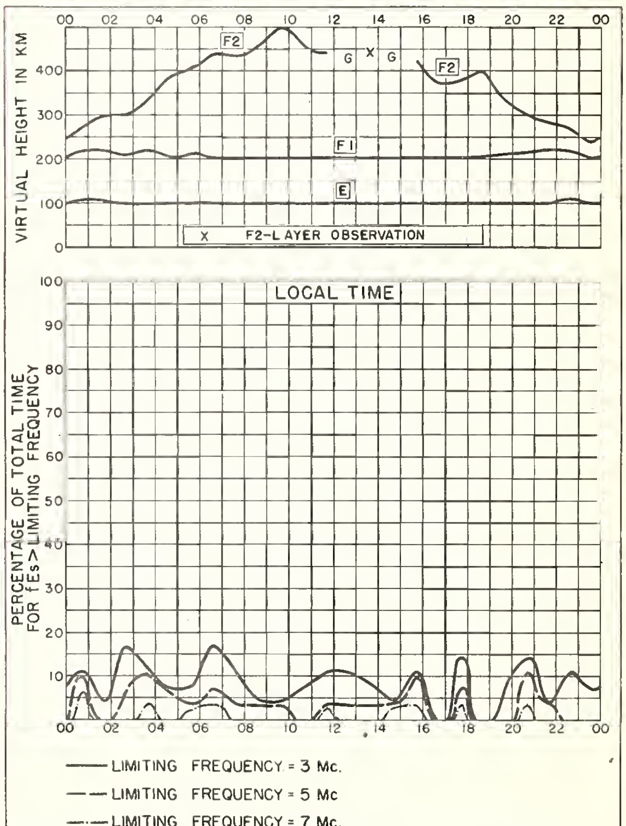


Fig. 32. RESOLUTE BAY, CANADA JUNE 1952

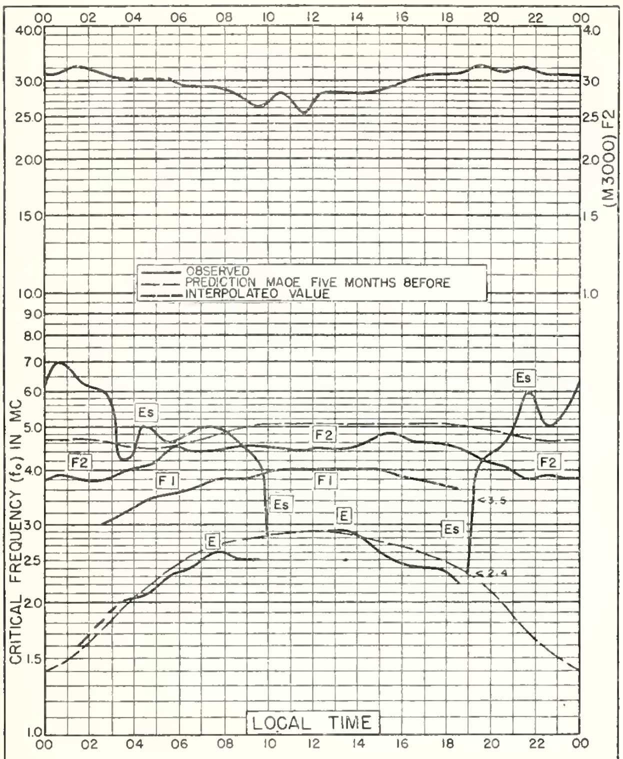


Fig. 33. POINT BARROW, ALASKA
71.3°N, 156.8°W JUNE 1952

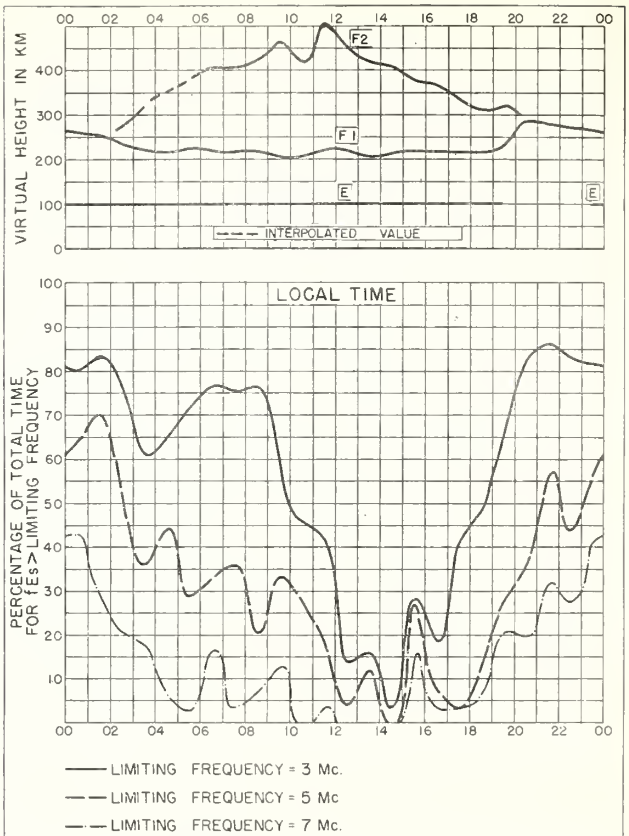


Fig. 34. POINT BARROW, ALASKA JUNE 1952

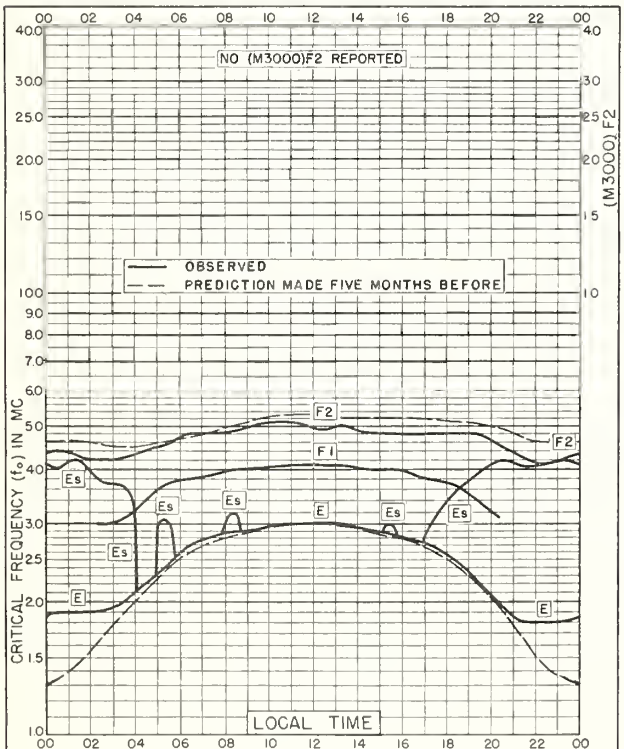


Fig. 35. KIRUNA, SWEDEN
67.8°N, 20.5°E JUNE 1952

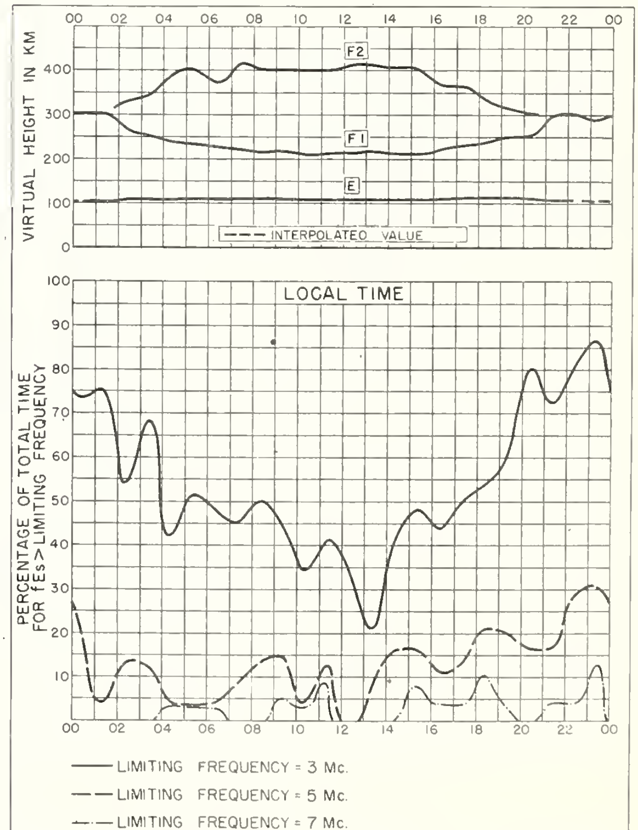


Fig. 36. KIRUNA, SWEDEN JUNE 1952

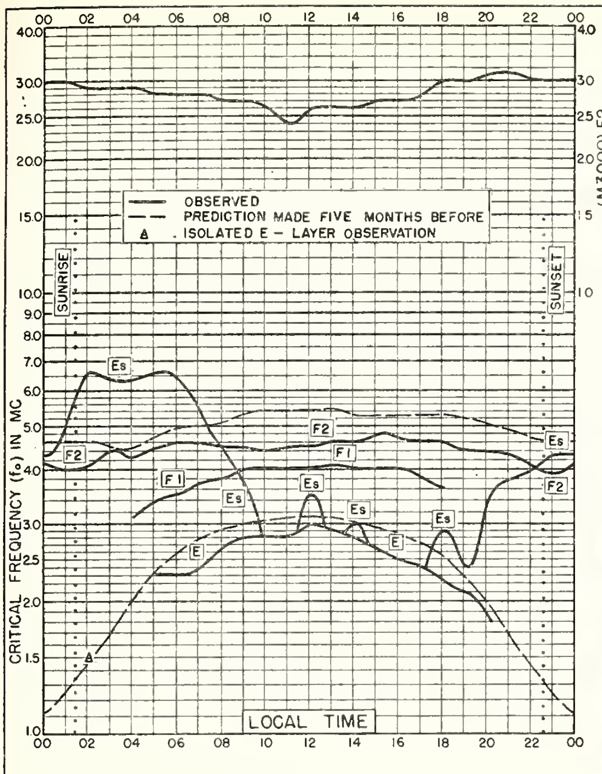


Fig. 37. FAIRBANKS, ALASKA
64.9°N, 147.8°W JUNE 1952

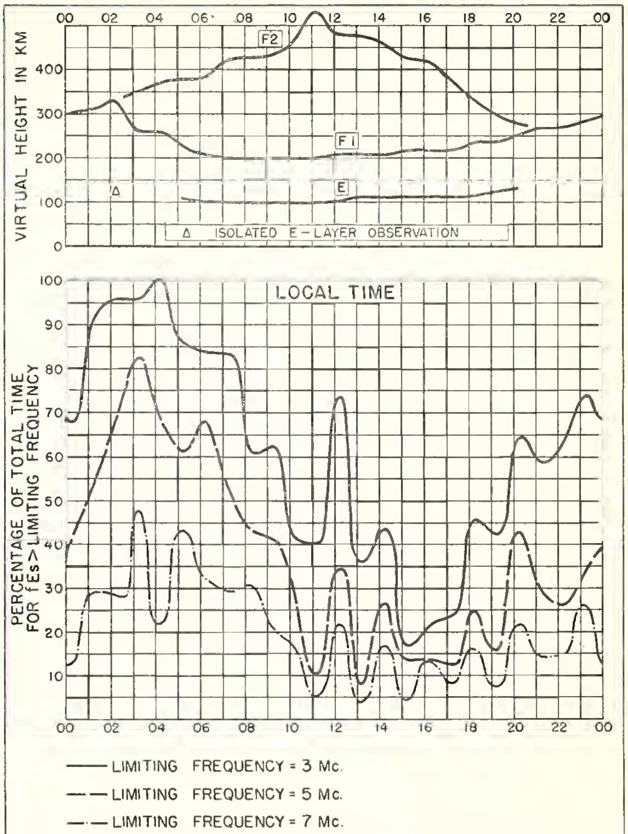


Fig. 38. FAIRBANKS, ALASKA JUNE 1952

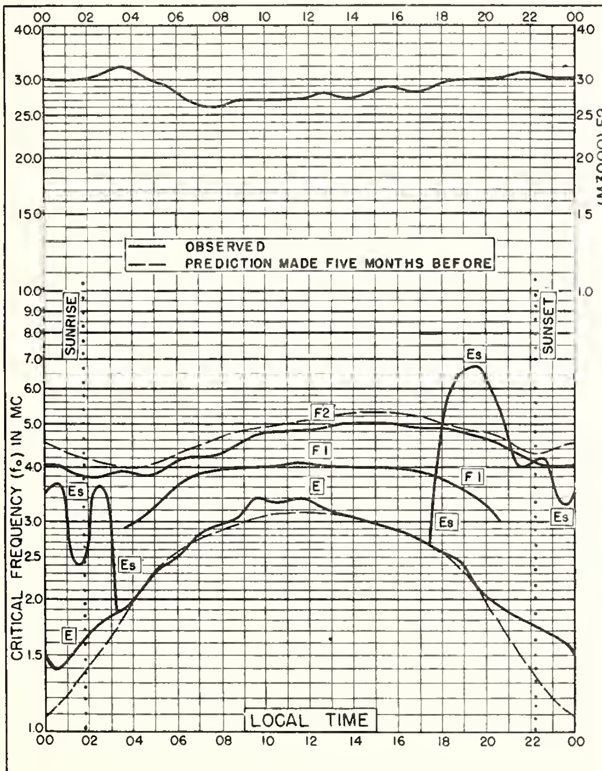


Fig. 39. BAKER LAKE, CANADA
64.3°N, 96.0°W JUNE 1952

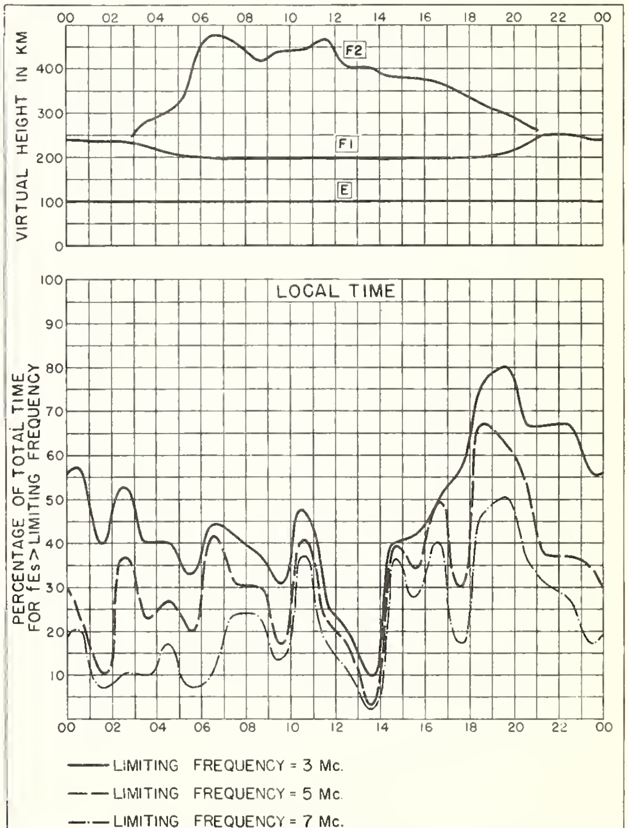


Fig. 40. BAKER LAKE, CANADA JUNE 1952

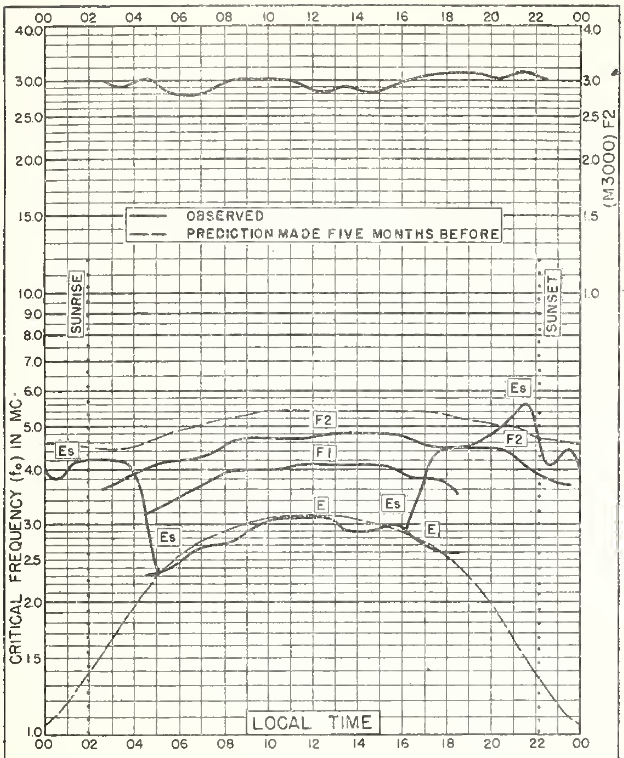


Fig. 41. REYKJAVIK, ICELAND
64.1°N, 21.8°W JUNE 1952

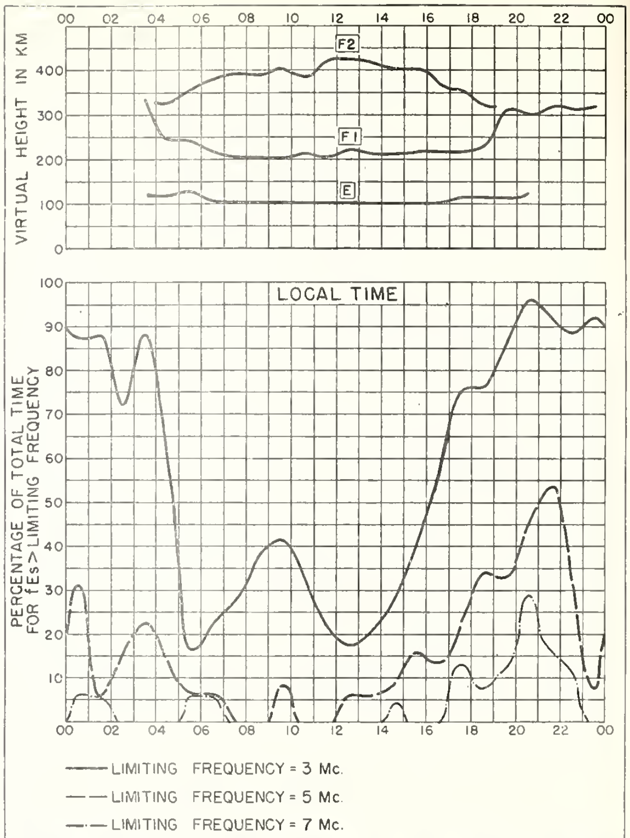


Fig. 42. REYKJAVIK, ICELAND JUNE 1952

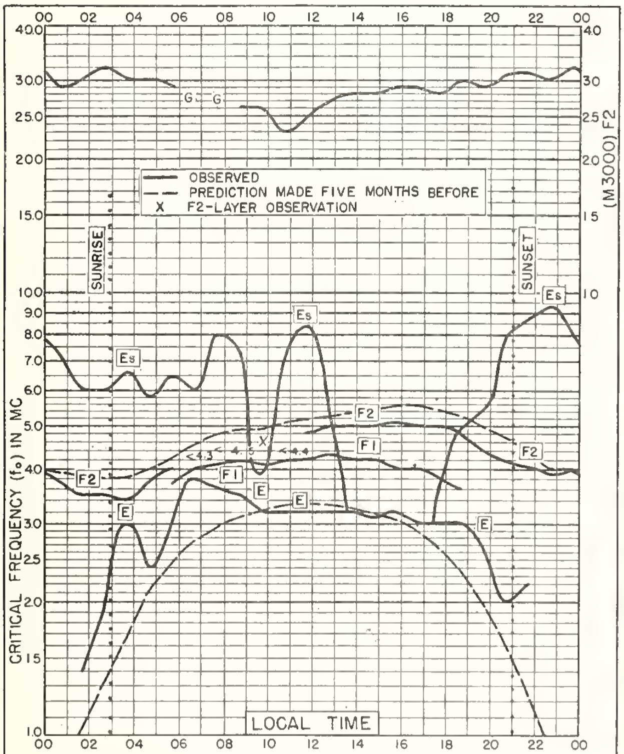


Fig. 43 CHURCHILL, CANADA
58.8°N, 94.2°W JUNE 1952

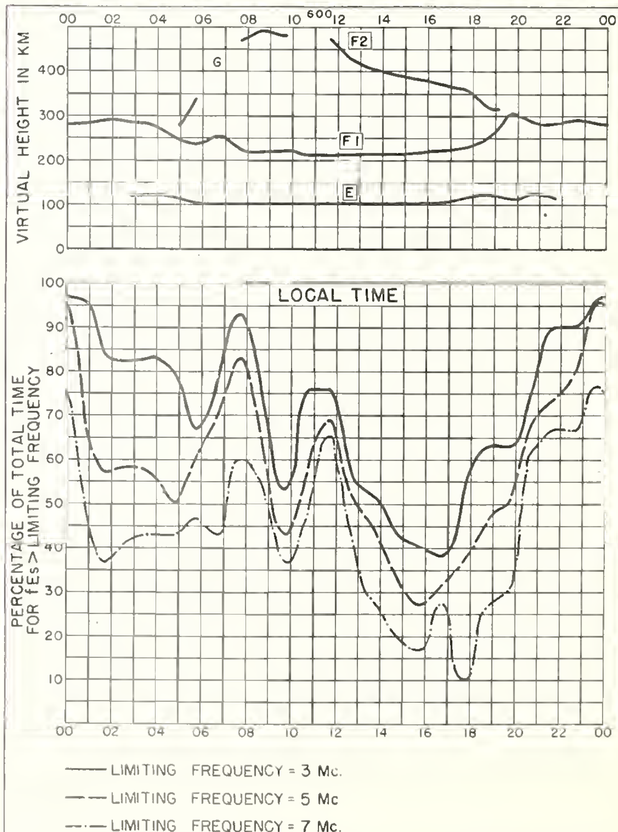


Fig 44. CHURCHILL, CANADA JUNE 1952

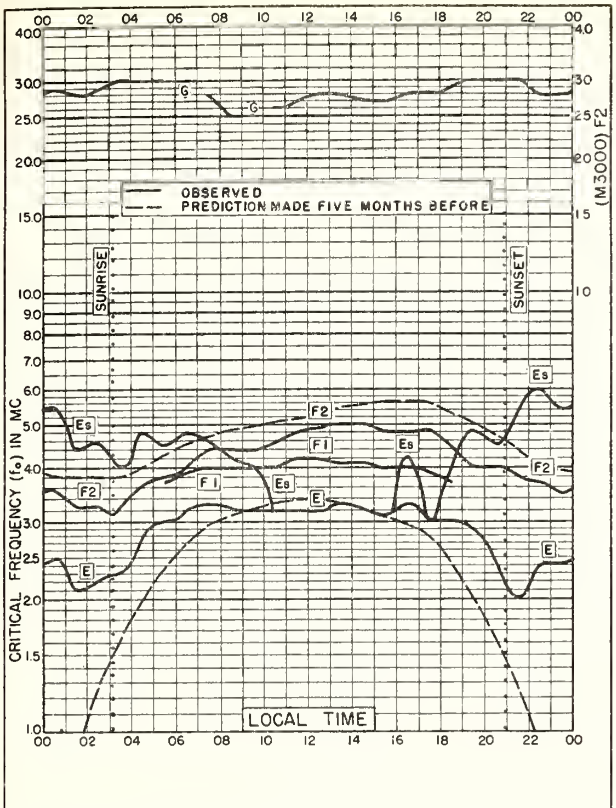


Fig. 45. FORT CHIMO, CANADA
58.1°N, 68.3°W JUNE 1952

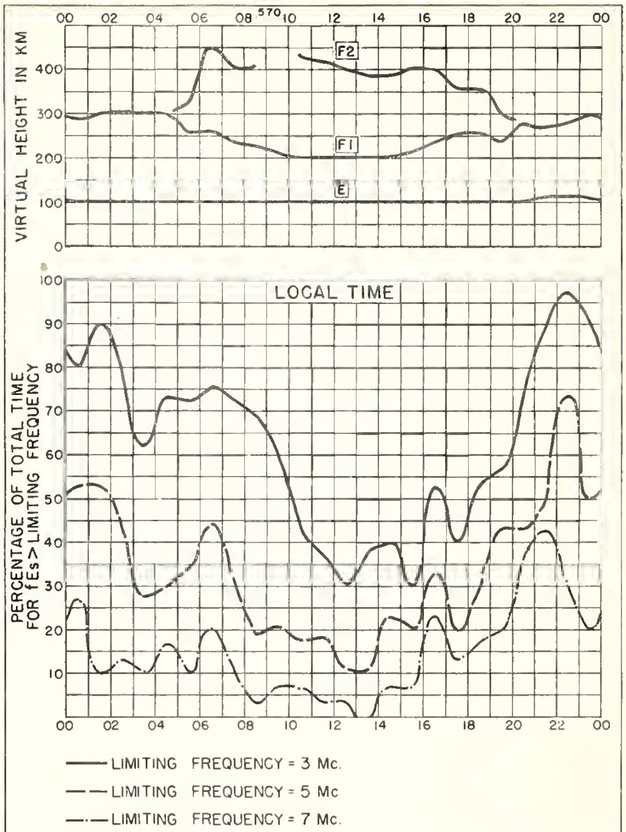


Fig. 46. FORT CHIMO, CANADA JUNE 1952

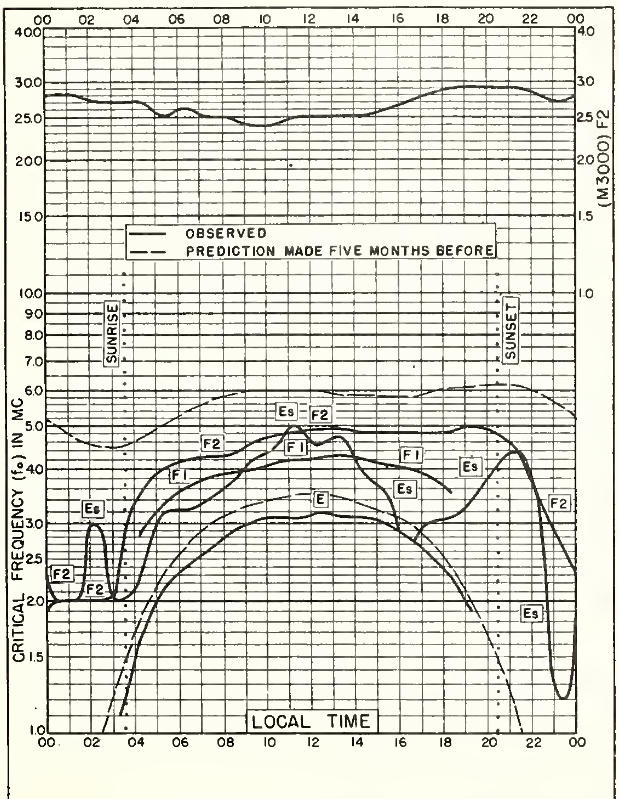


Fig. 47. PRINCE RUPERT, CANADA
54.3°N, 130.3°W JUNE 1952

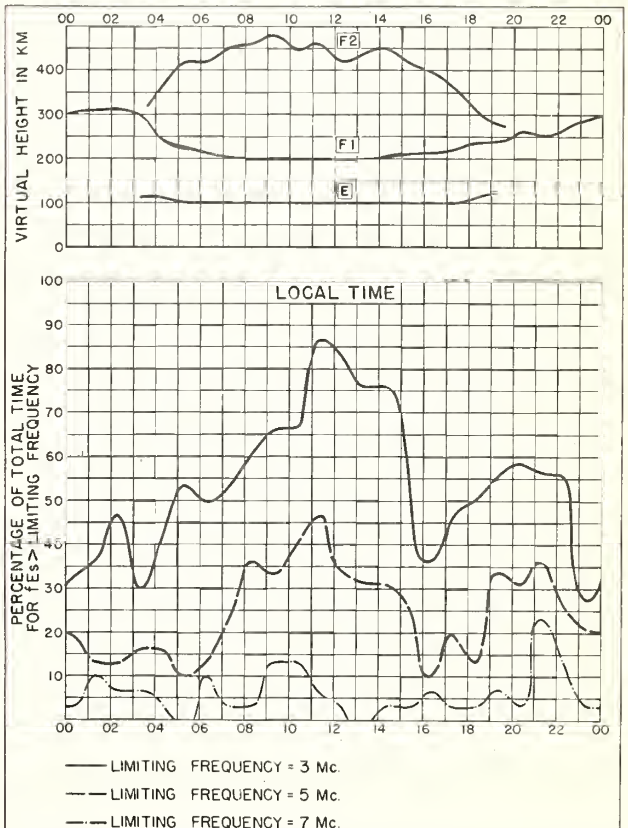


Fig. 48. PRINCE RUPERT, CANADA JUNE 1952

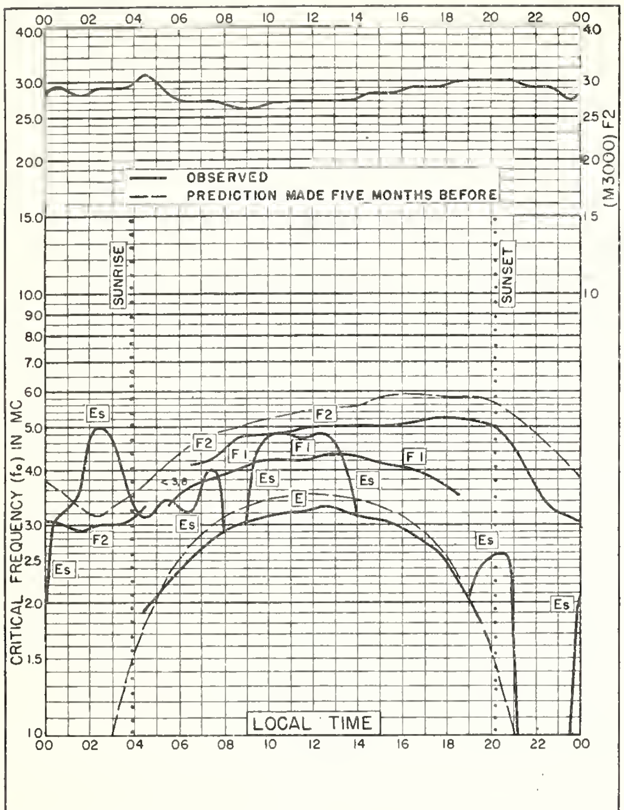


Fig. 49. WINNIPEG, CANADA
49.9°N, 97.4°W JUNE 1952

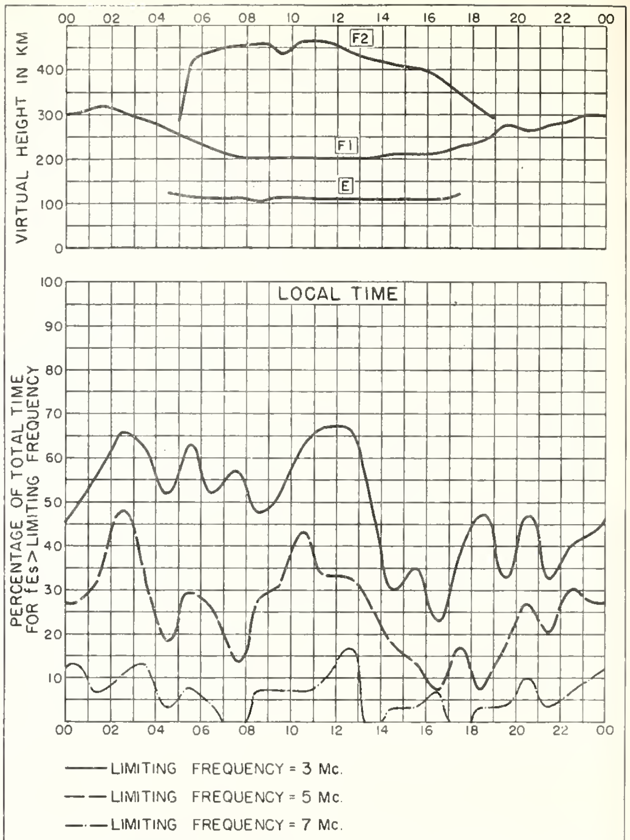


Fig. 50. WINNIPEG, CANADA JUNE 1952

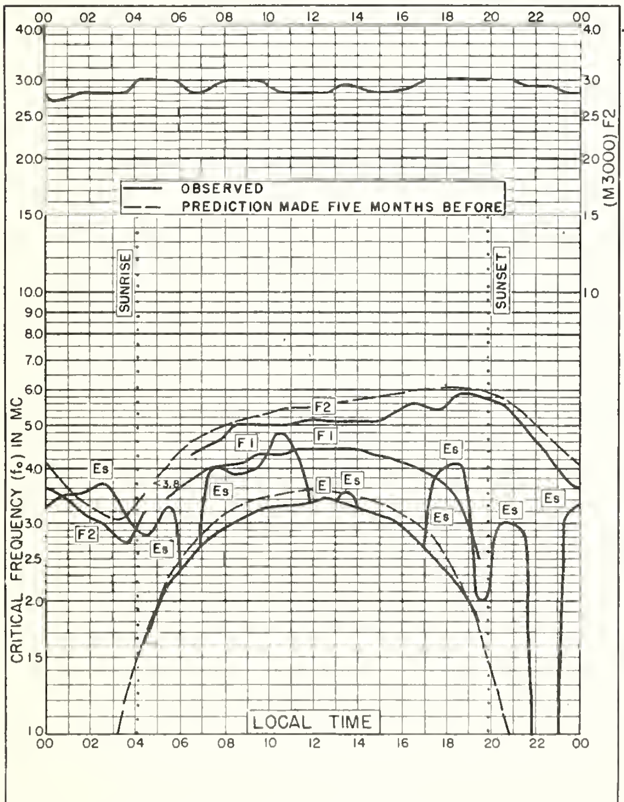


Fig. 51. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JUNE 1952

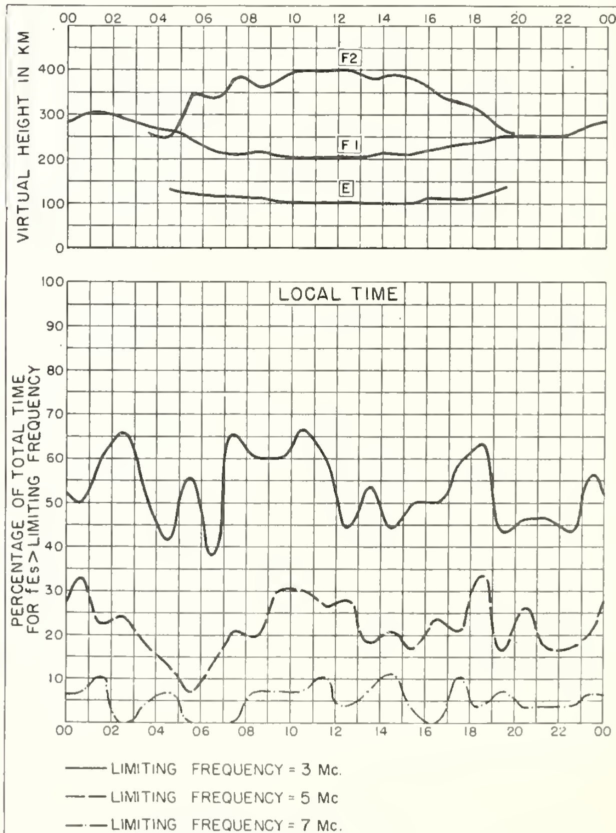


Fig. 52. ST. JOHN'S, NEWFOUNDLAND JUNE 1952

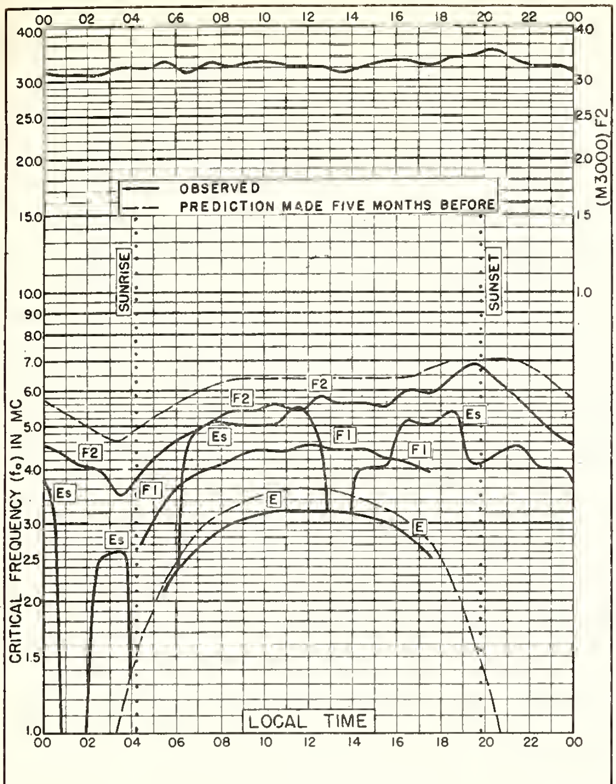


Fig. 53. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E JUNE 1952

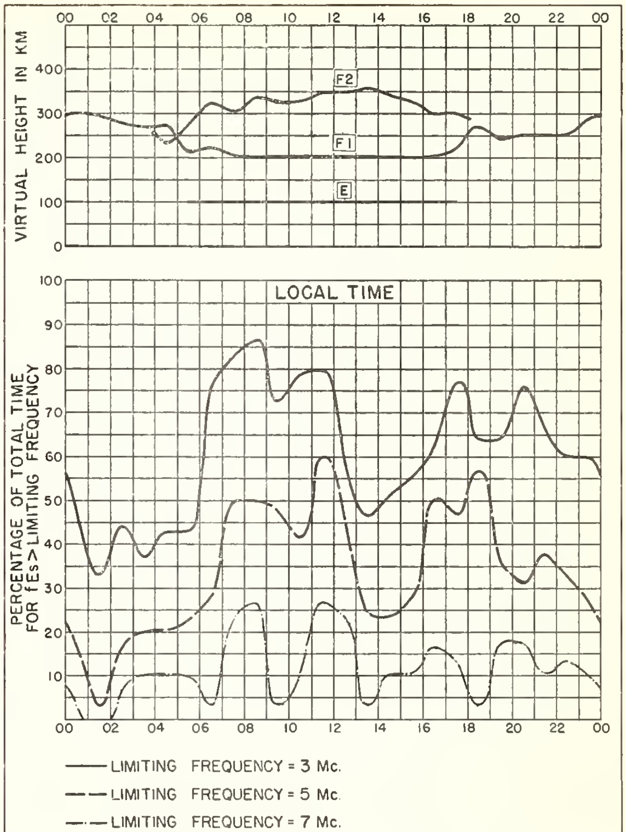


Fig. 54. SCHWARZENBURG, SWITZERLAND JUNE 1952

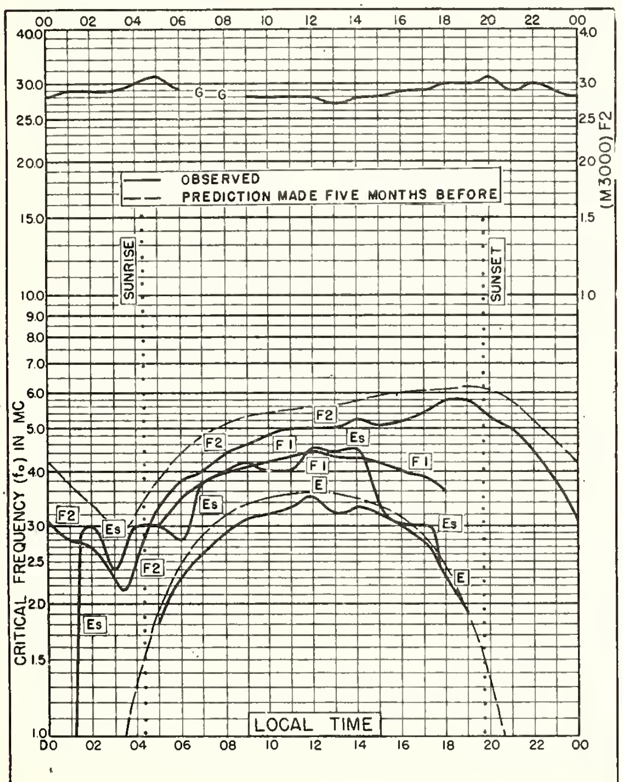


Fig. 55. OTTAWA, CANADA
45.4°N, 75.7°W JUNE 1952

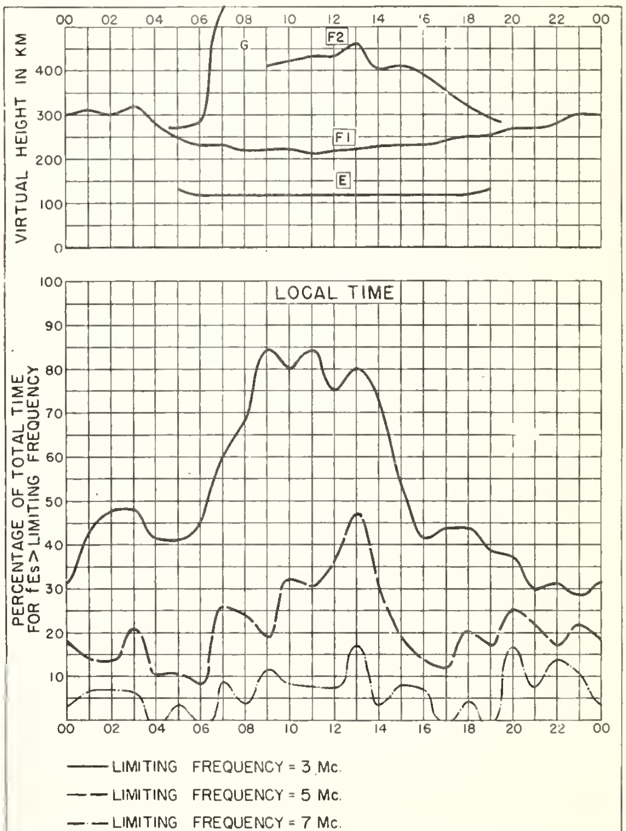


Fig. 56. OTTAWA, CANADA JUNE 1952

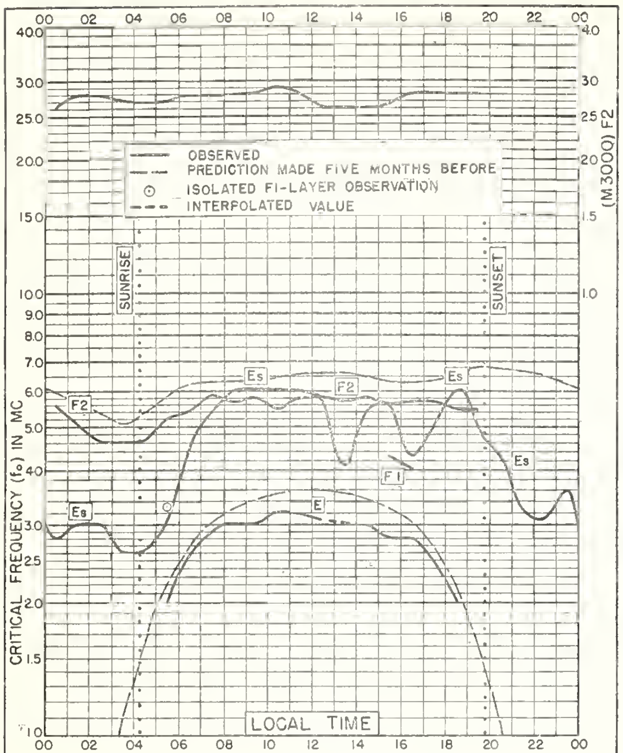


Fig. 57. WAKKANAI, JAPAN
45.4° N, 141.7°E JUNE 1952

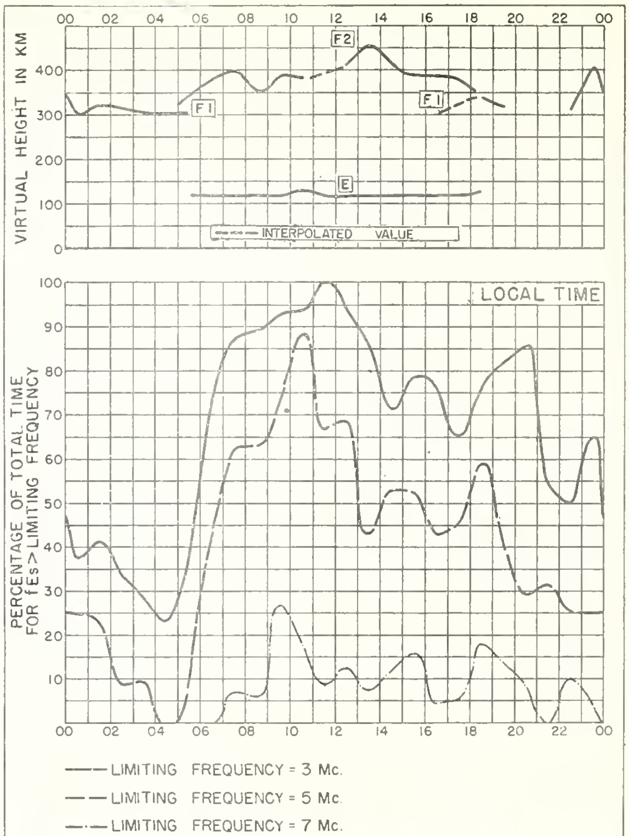


Fig. 58. WAKKANAI, JAPAN JUNE 1952

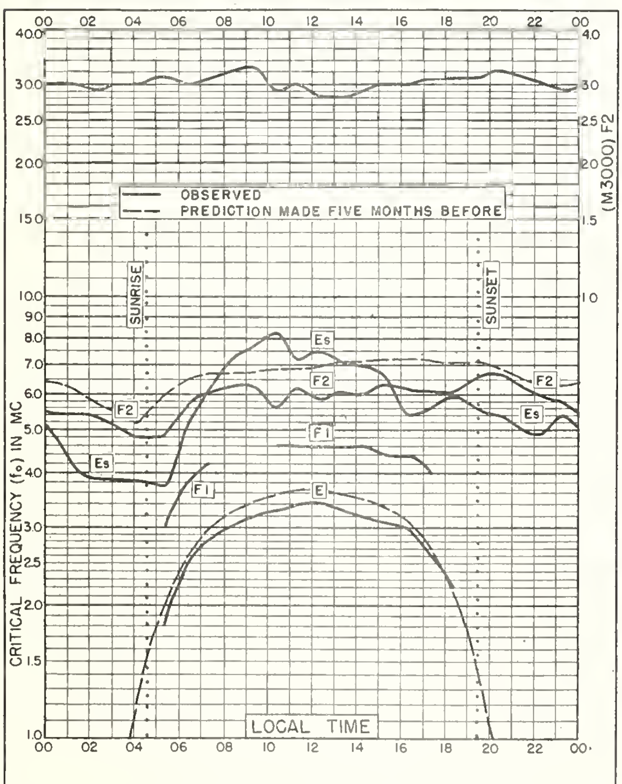


Fig. 59. AKITA, JAPAN
39.7°N, 140.1°E JUNE 1952

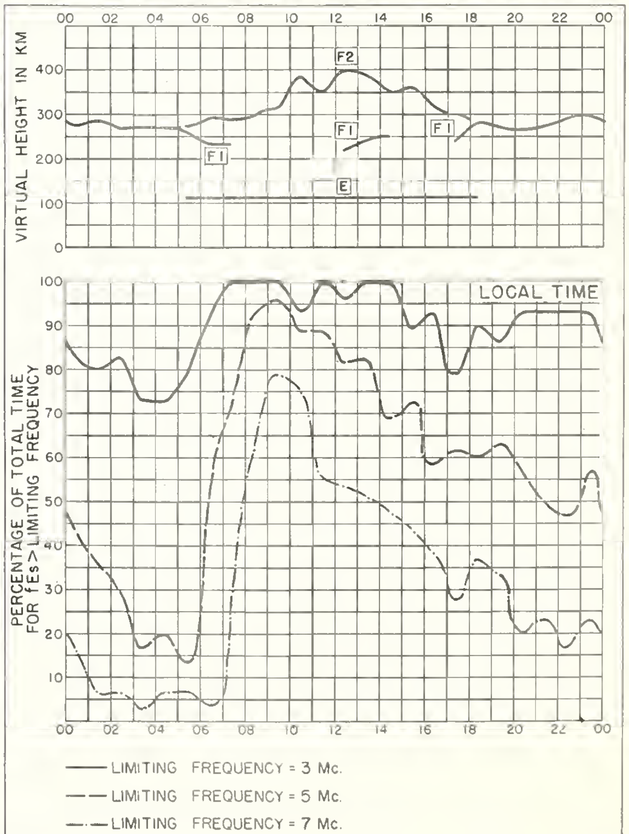


Fig. 60. AKITA, JAPAN JUNE 1952

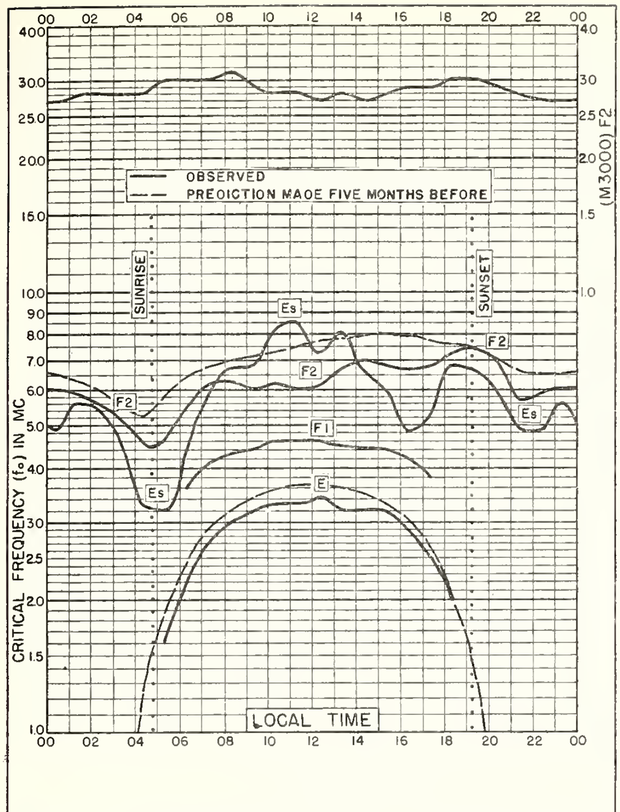


Fig. 61. TOKYO, JAPAN
35.7°N, 139.5°E JUNE 1952

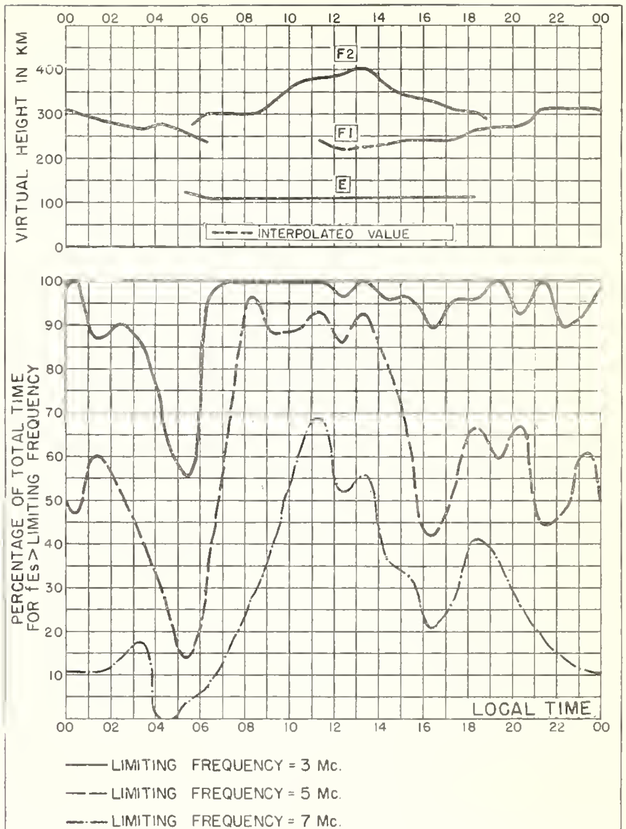


Fig. 62. TOKYO, JAPAN JUNE 1952

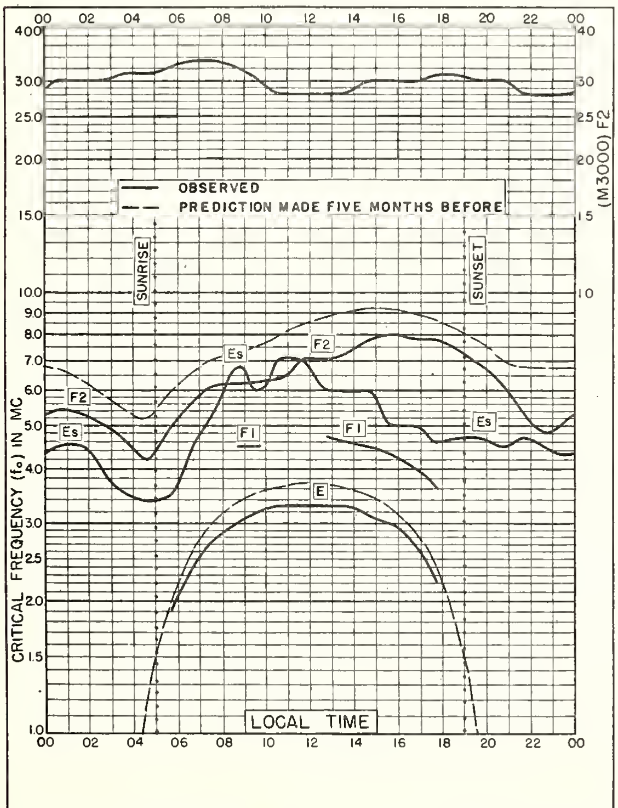


Fig. 63. YAMAGAWA, JAPAN
31.2°N, 130.6°E JUNE 1952

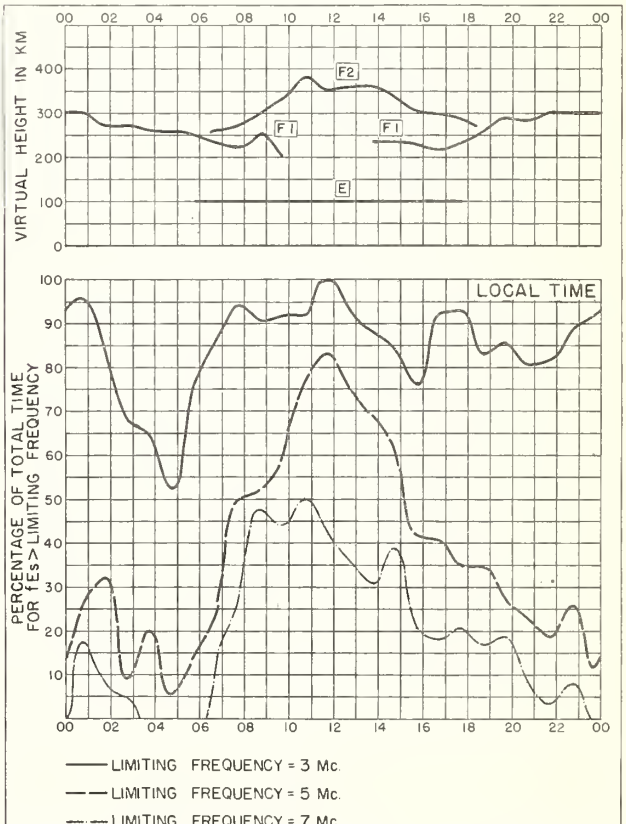


Fig. 64. YAMAGAWA, JAPAN JUNE 1952

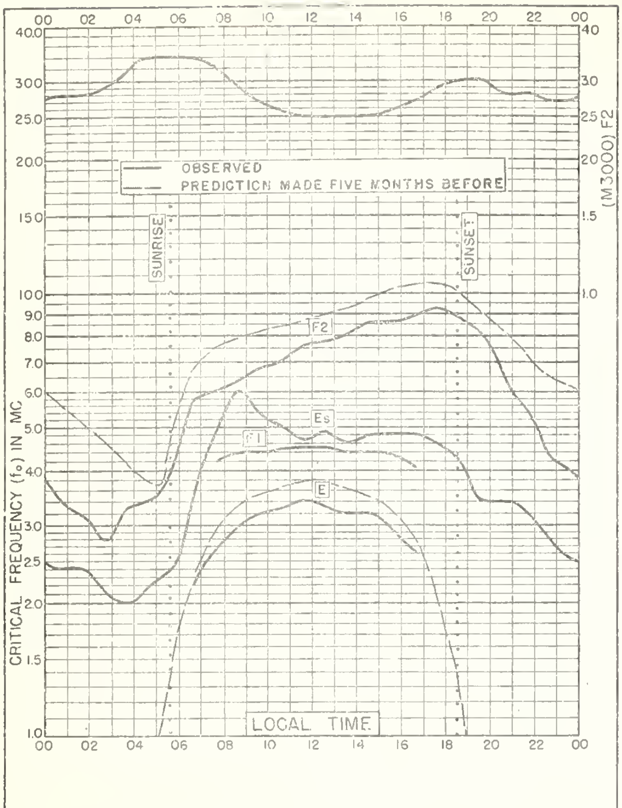


Fig. 65. GUAM I.
13.6°N, 144.9°E JUNE 1952

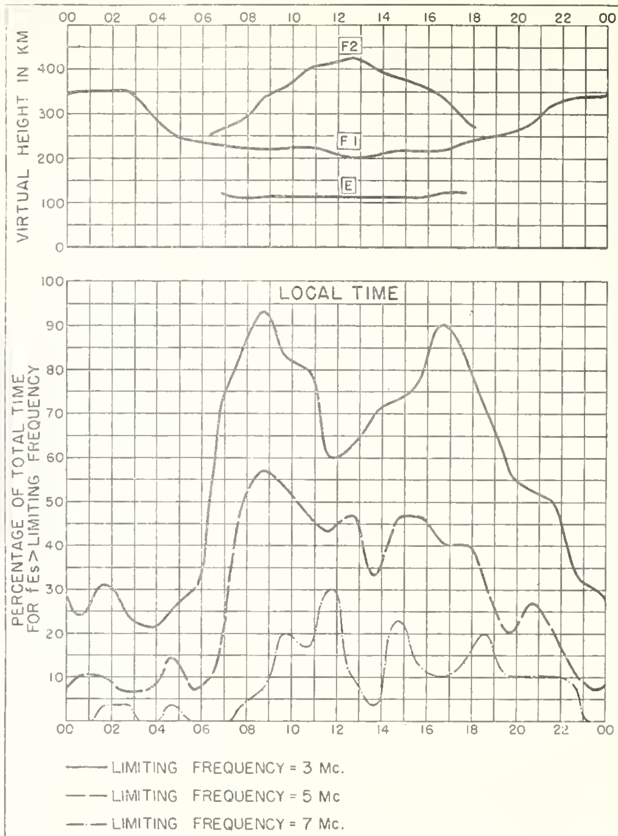


Fig. 66. GUAM I. JUNE 1952

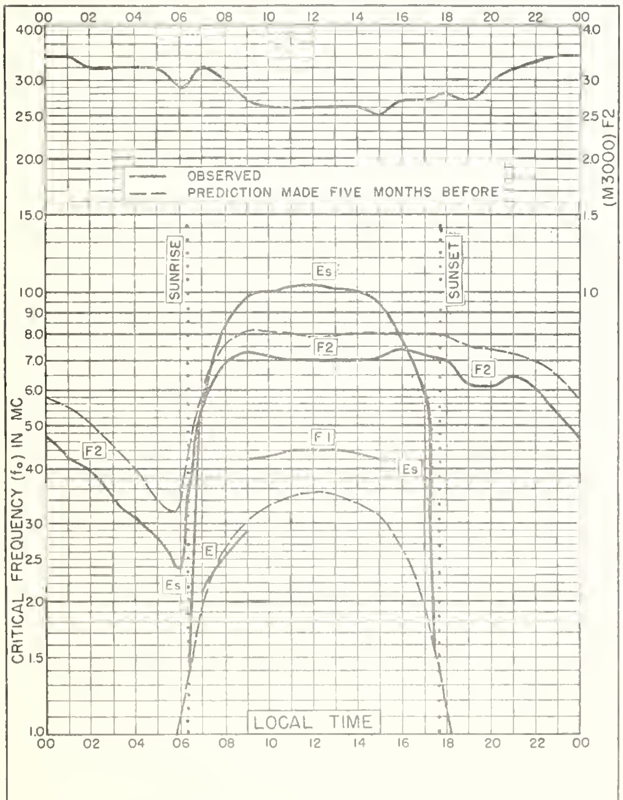


Fig. 67. HUANCAYO, PERU
12.0°S, 75.3°W JUNE 1952

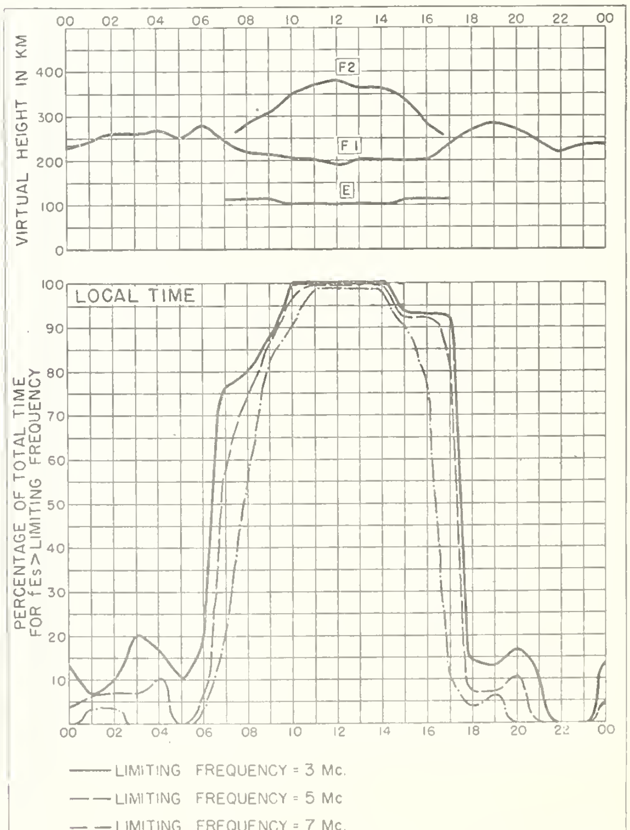


Fig. 68. HUANCAYO, PERU JUNE 1952

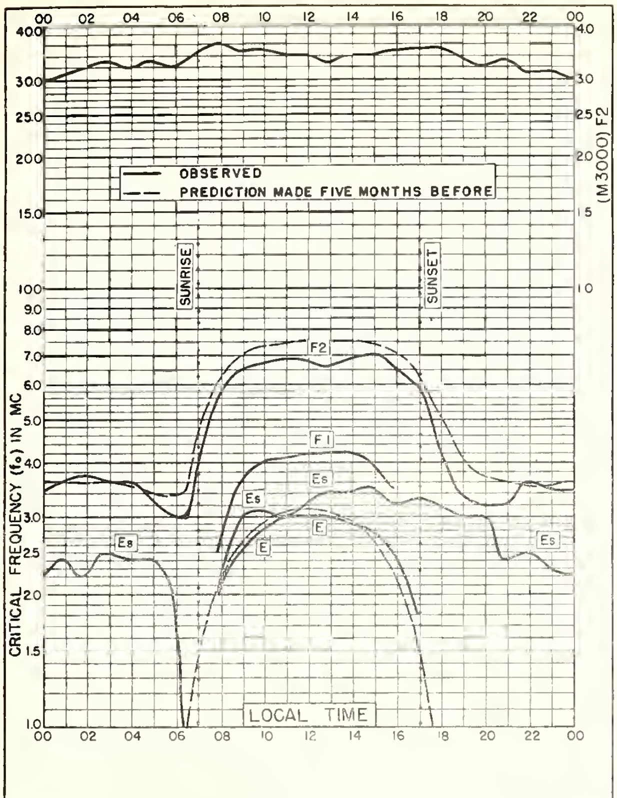


Fig.69. WATHEROO, W. AUSTRALIA 30.3°S, 115.9°E JUNE 1952

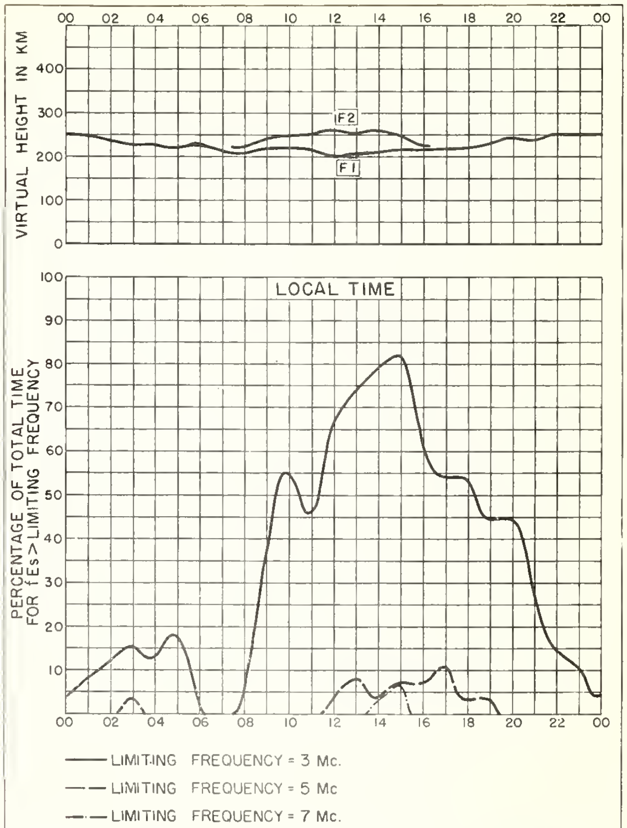


Fig.70. WATHEROO, W. AUSTRALIA JUNE 1952

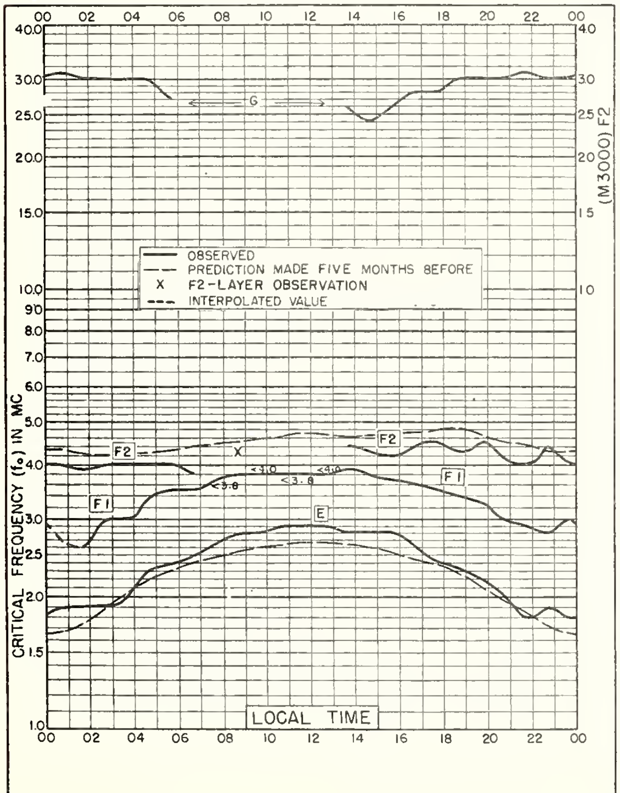


Fig.71. RESOLUTE BAY, CANADA 74.7°N, 94.9°W MAY 1952

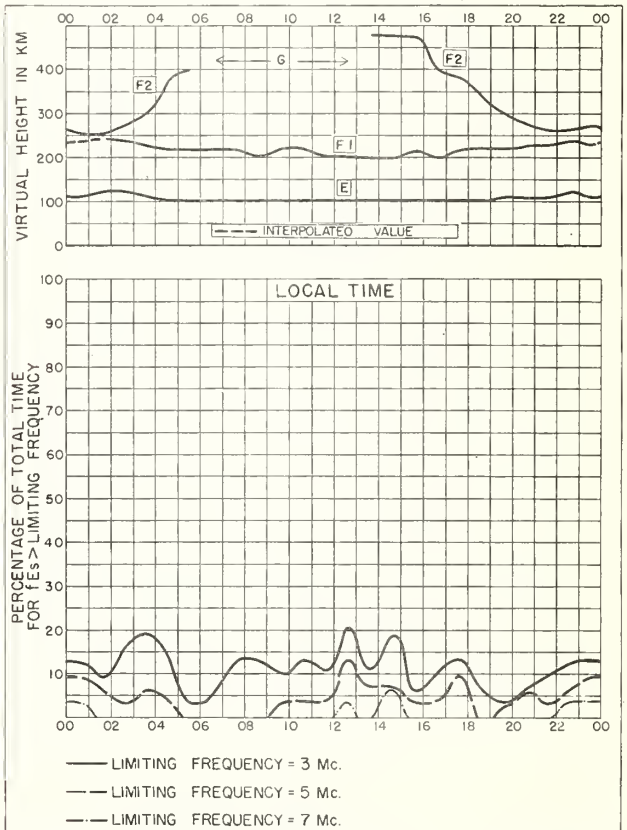


Fig. 72. RESOLUTE BAY, CANADA MAY 1952

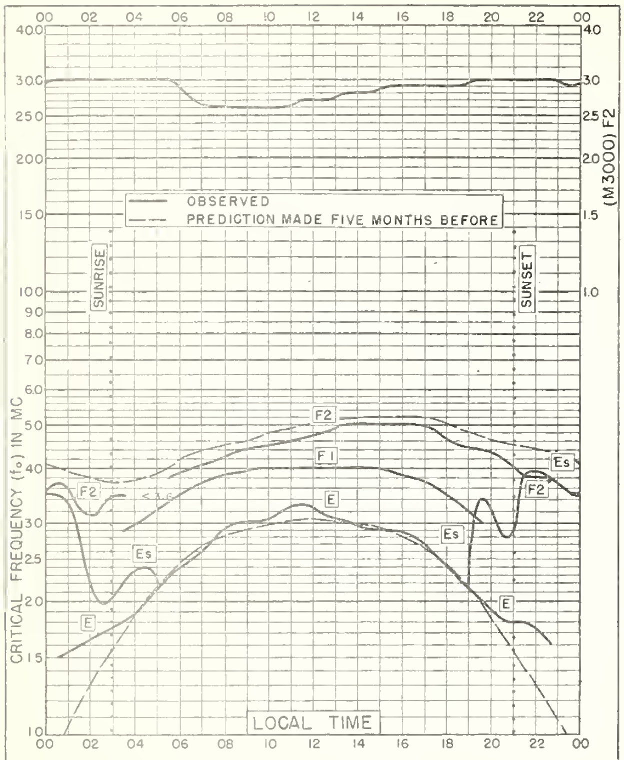


Fig. 73. BAKER LAKE, CANADA
64.3°N, 96.0°W MAY 1952

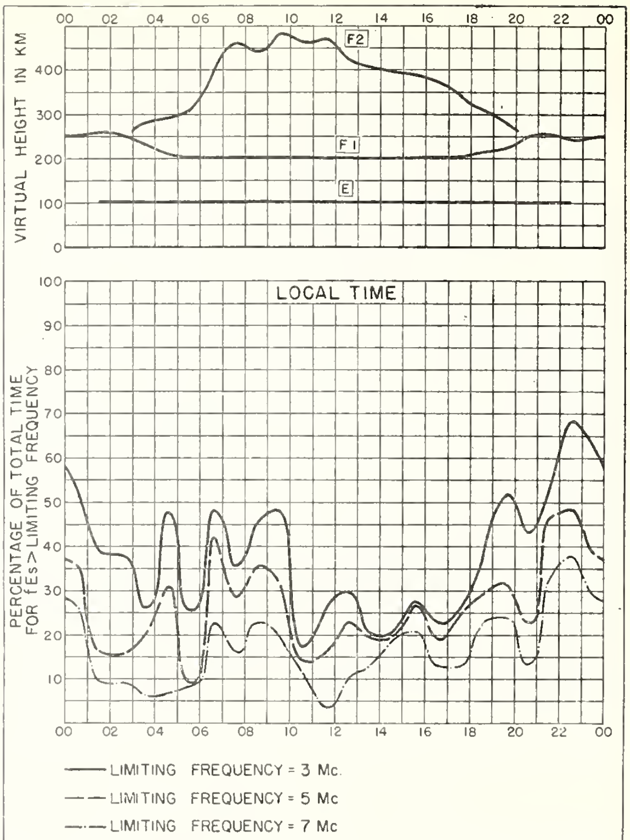


Fig. 74. BAKER LAKE, CANADA MAY 1952

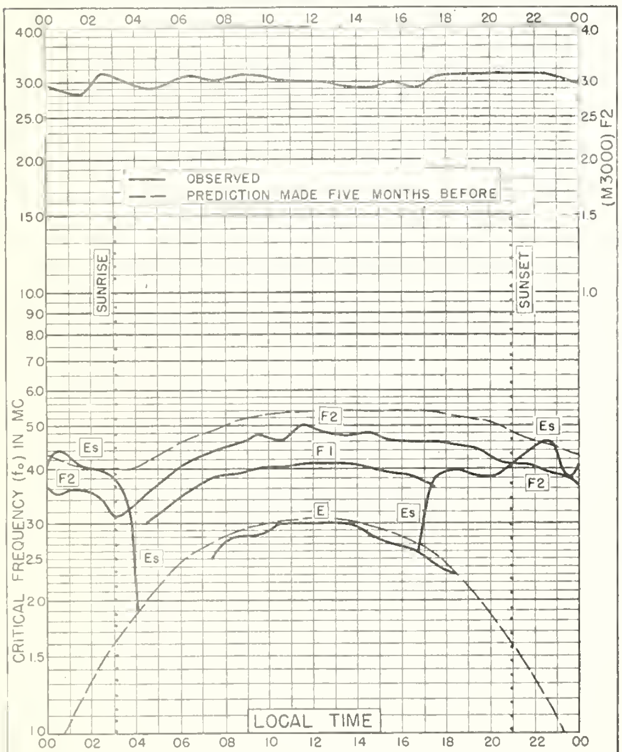


Fig. 75. REYKJAVIK, ICELAND
64.1°N, 21.8°W MAY 1952

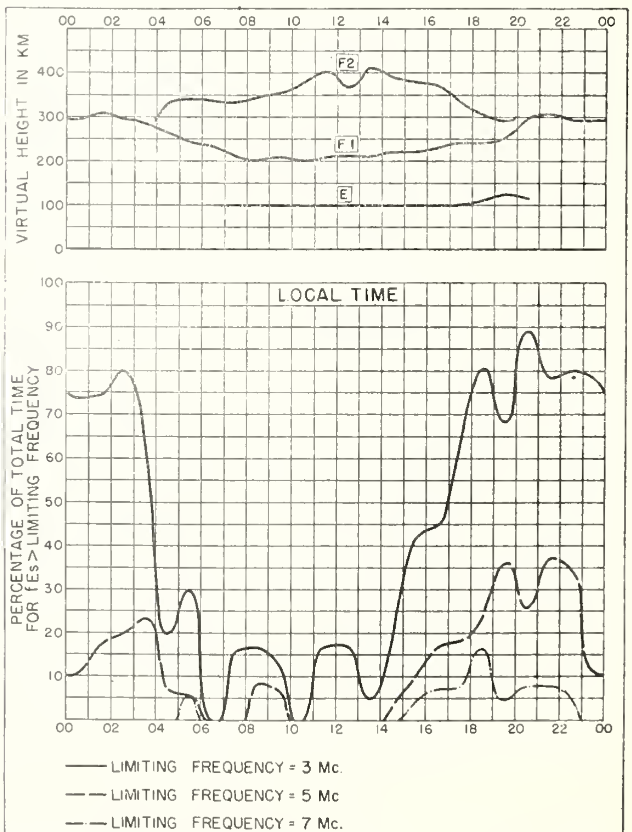


Fig. 76. REYKJAVIK, ICELAND MAY 1952

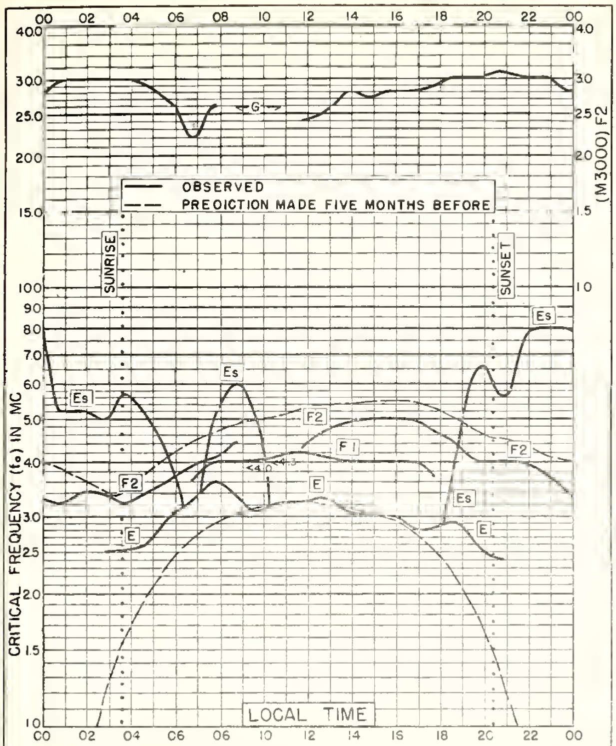


Fig. 77. CHURCHILL, CANADA
58.8°N, 94.2°W MAY 1952

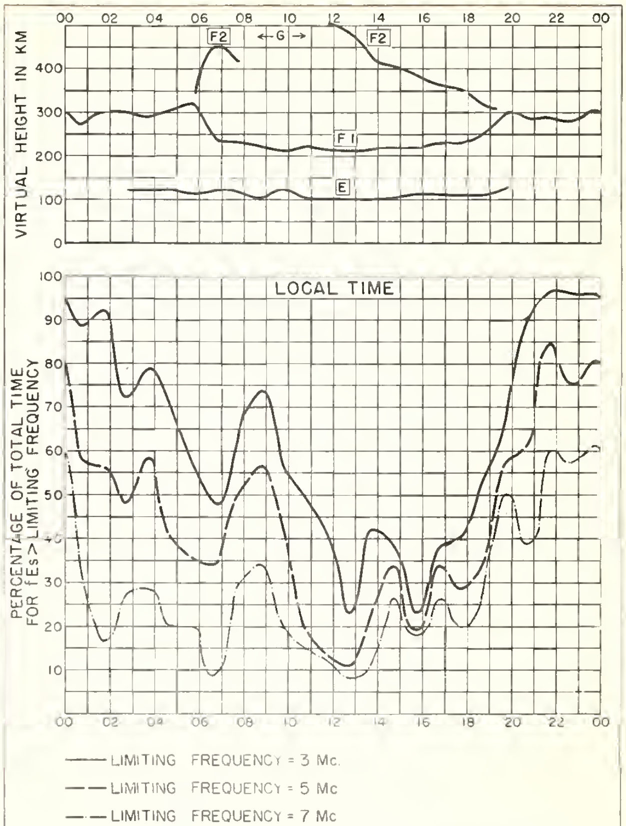


Fig 78. CHURCHILL, CANADA MAY 1952

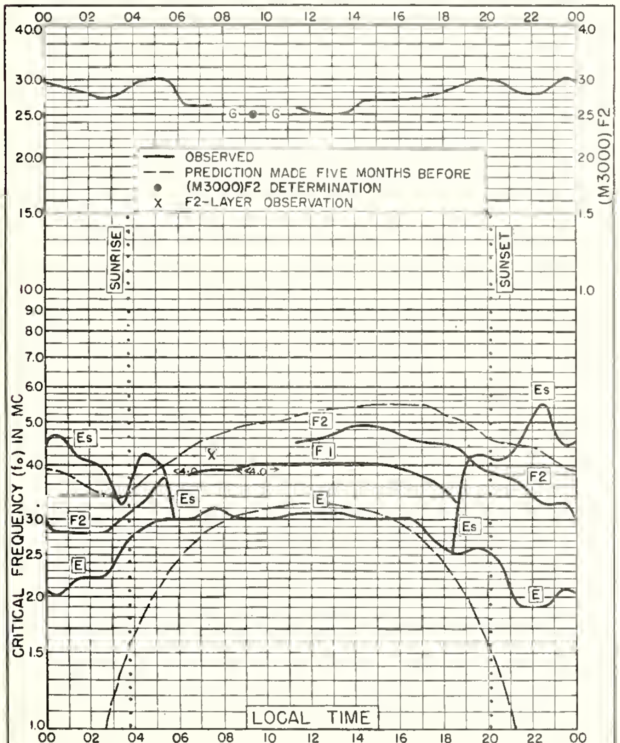


Fig. 79. FORT CHIMO, CANADA
58.1°N, 68.3°W MAY 1952

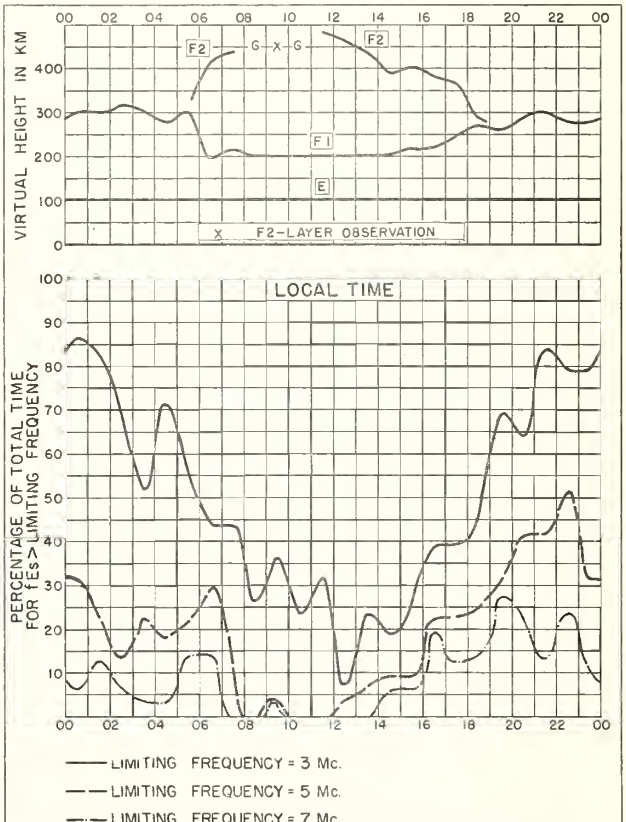


Fig. 80. FORT CHIMO, CANADA MAY 1952

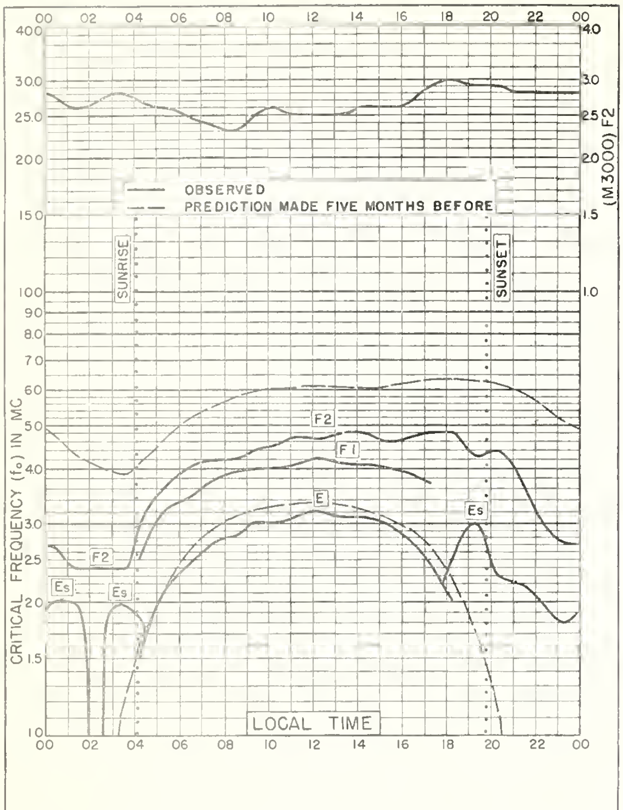


Fig. 81. PRINCE RUPERT, CANADA
54.3°N, 130.3°W MAY 1952

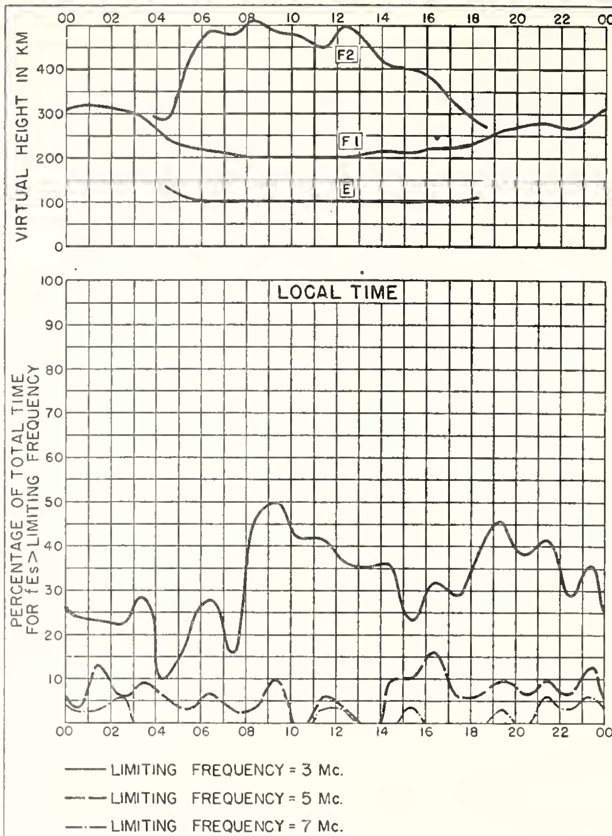


Fig. 82. PRINCE RUPERT, CANADA MAY 1952

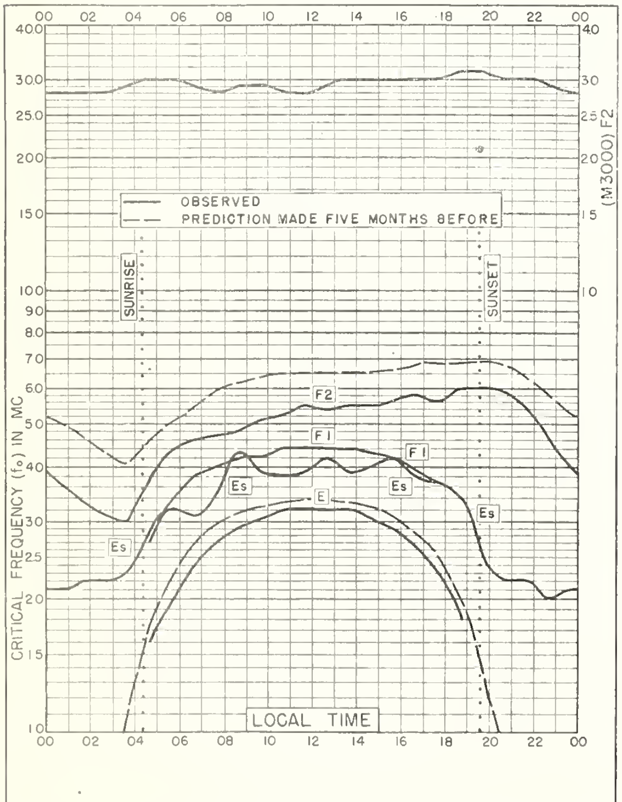


Fig 83. LINDAU / HARZ, GERMANY
51.6°N, 10.1°E MAY 1952

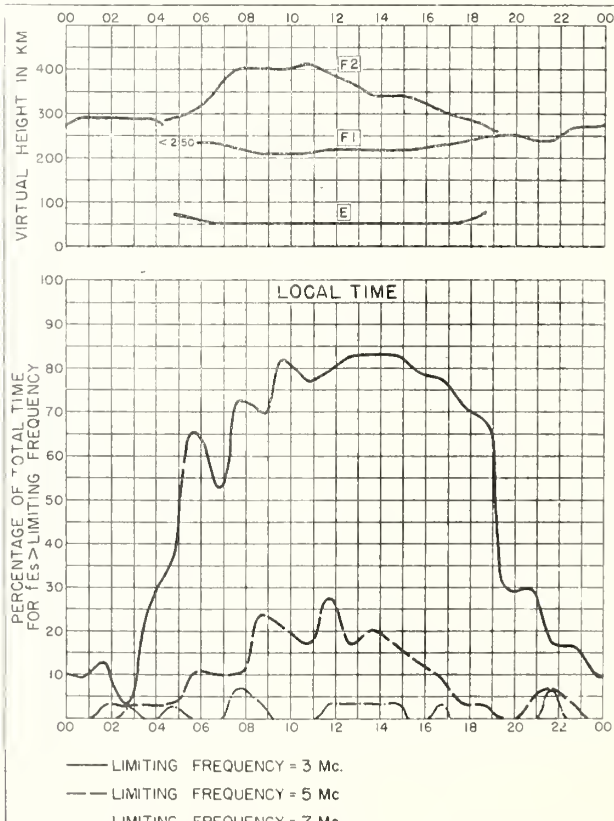


Fig 84. LINDAU / HARZ, GERMANY MAY 1952

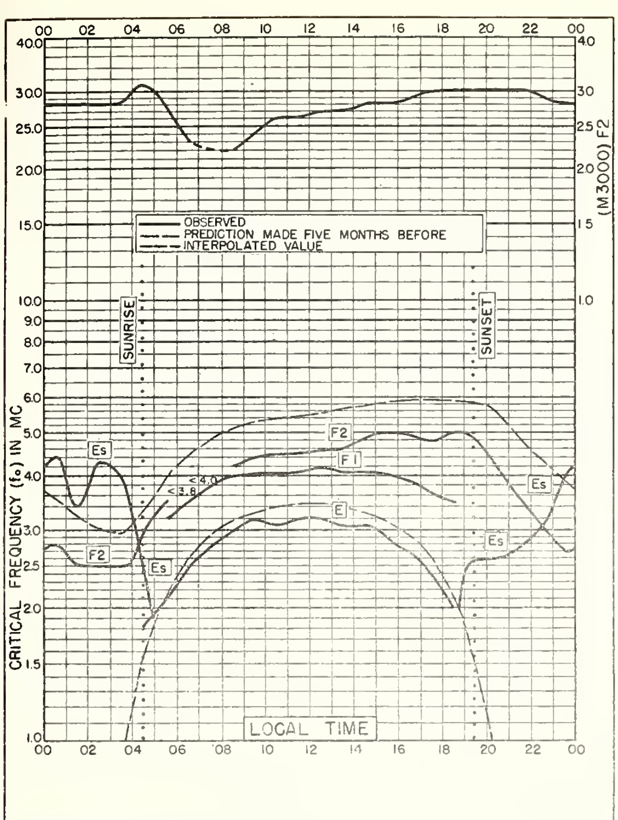


Fig. 85 WINNIPEG, CANADA
49.9°N, 97.4°W MAY 1952

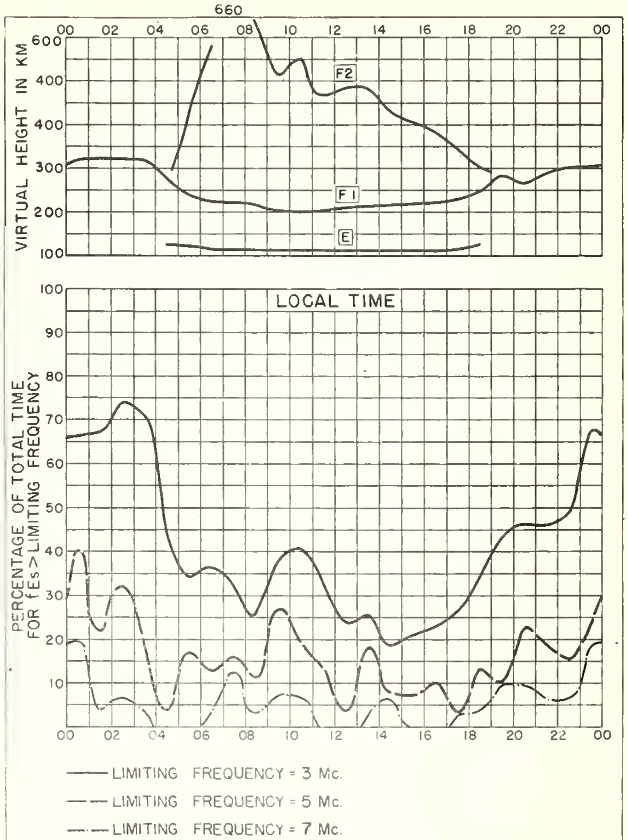


Fig. 86. WINNIPEG, CANADA MAY 1952

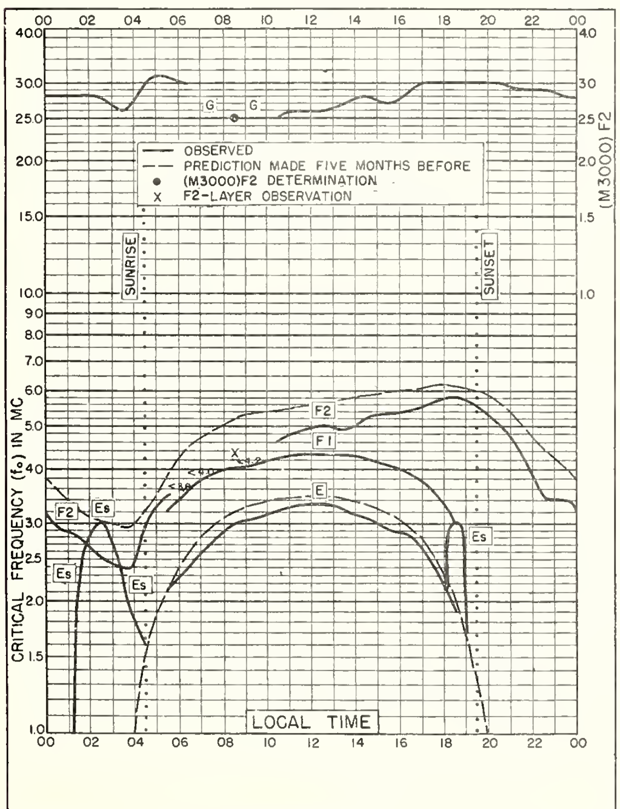


Fig. 87. ST. JOHN'S, NEWFOUNDLAND
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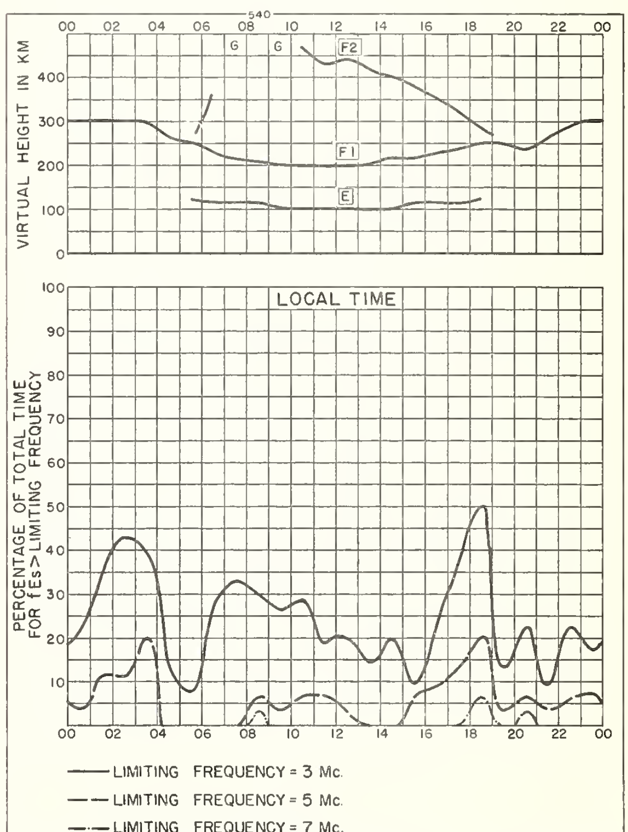

Fig. 88. ST. JOHN'S, NEWFOUNDLAND MAY 1952

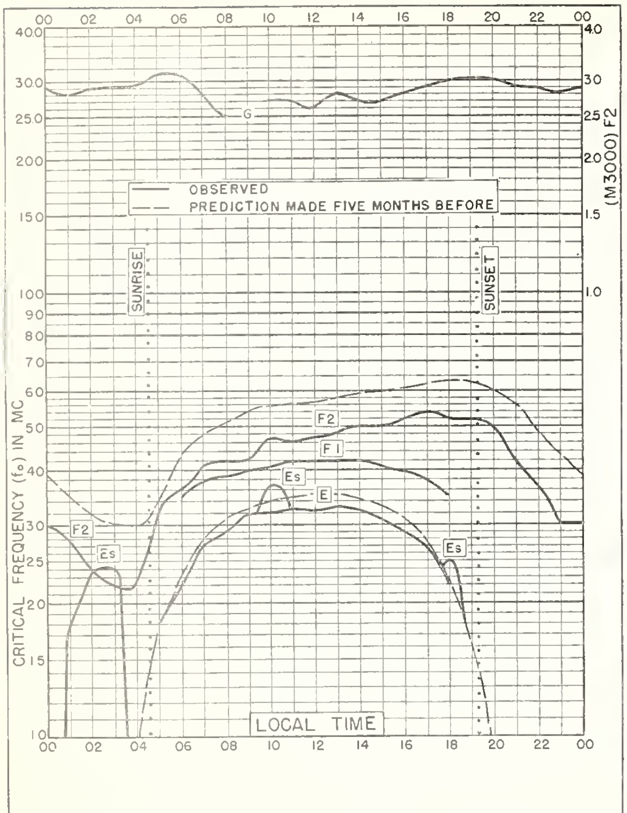

Fig. 89. OTTAWA, CANADA
45.4°N, 75.7°W MAY 1952

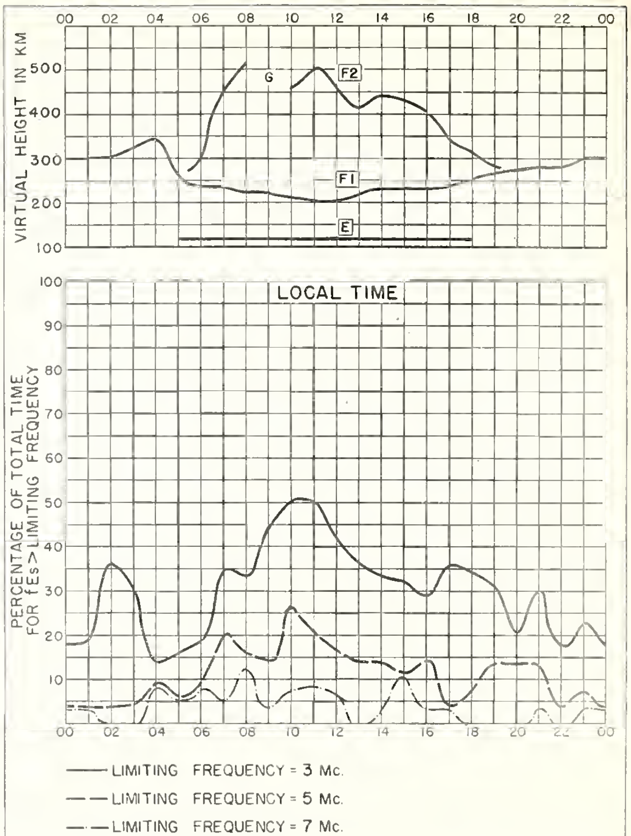

Fig. 90. OTTAWA, CANADA MAY 1952

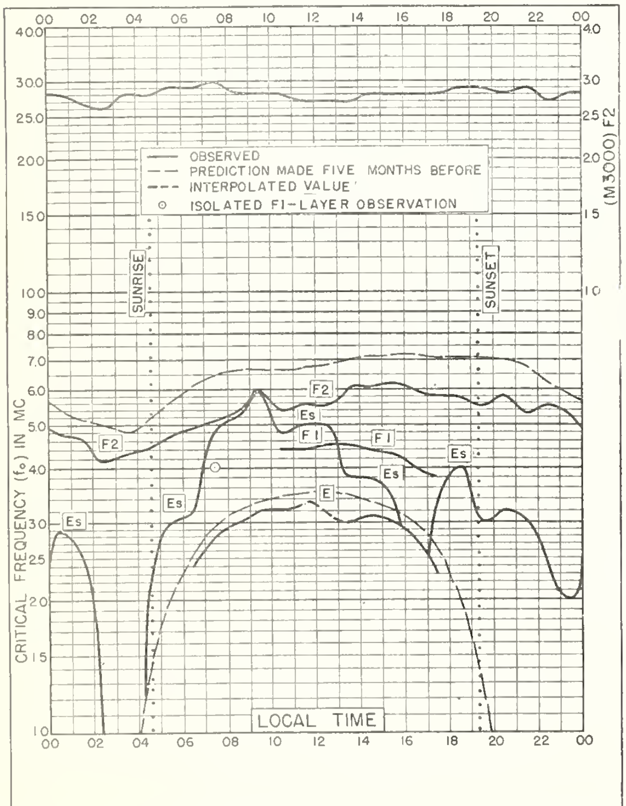

Fig. 91. WAKKANAI, JAPAN
45.4°N, 141.7°E MAY 1952

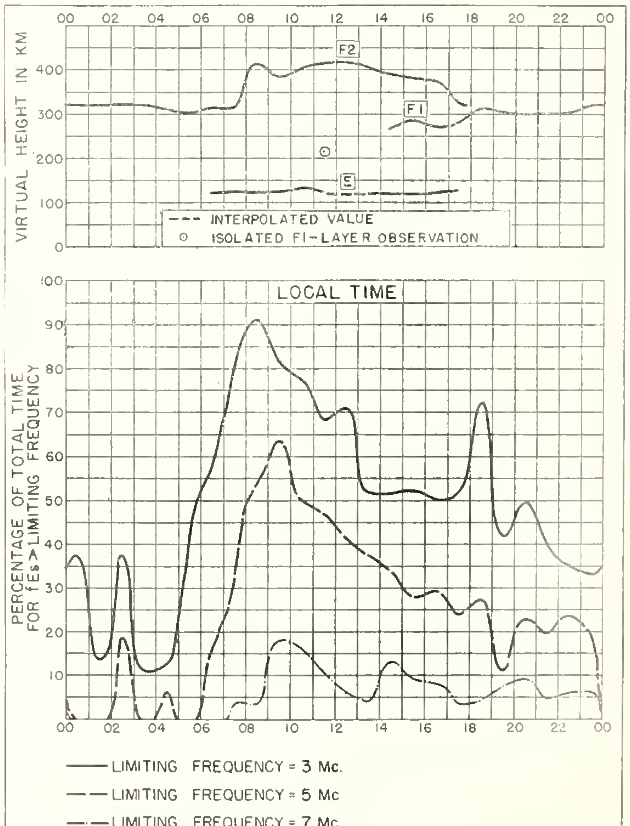

Fig. 92. WAKKANAI, JAPAN MAY 1952

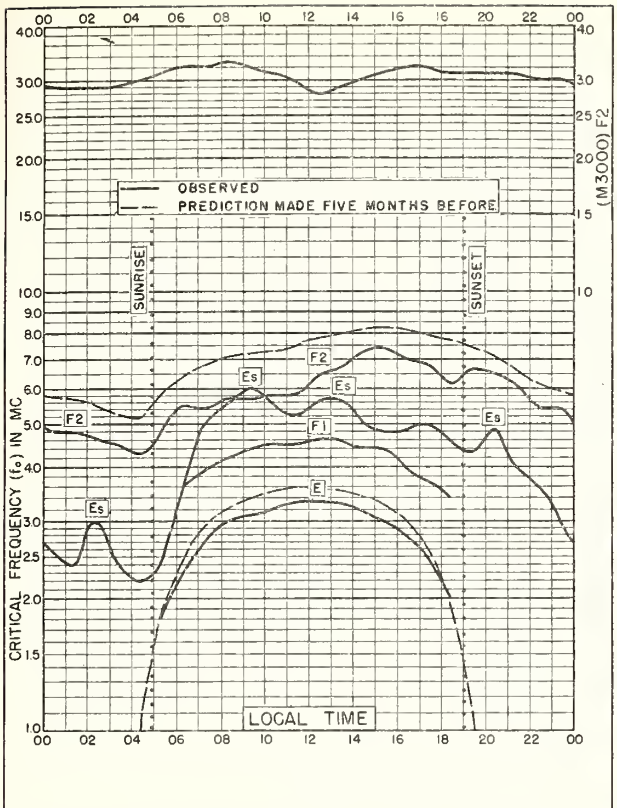

Fig. 93. AKITA, JAPAN
39.7°N, 140.1°E MAY 1952

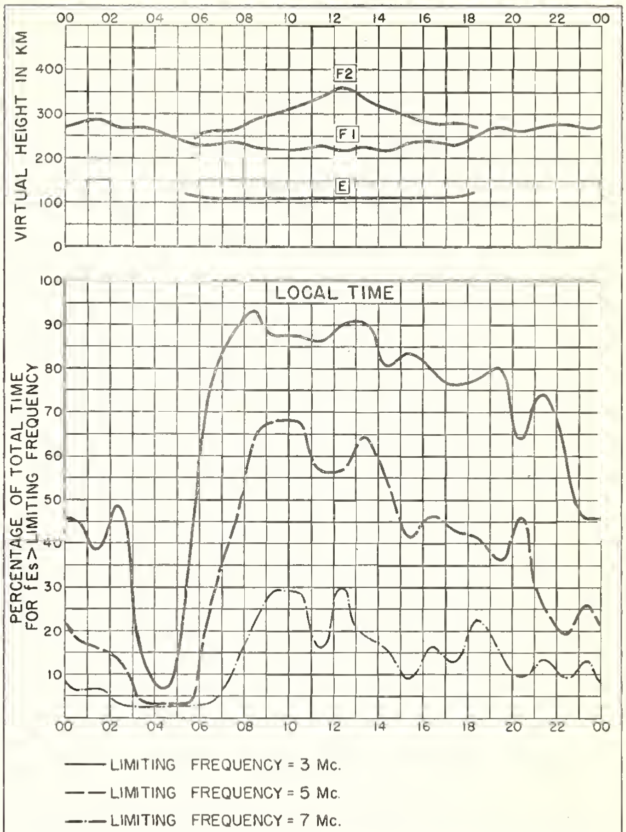

Fig. 94. AKITA, JAPAN MAY 1952

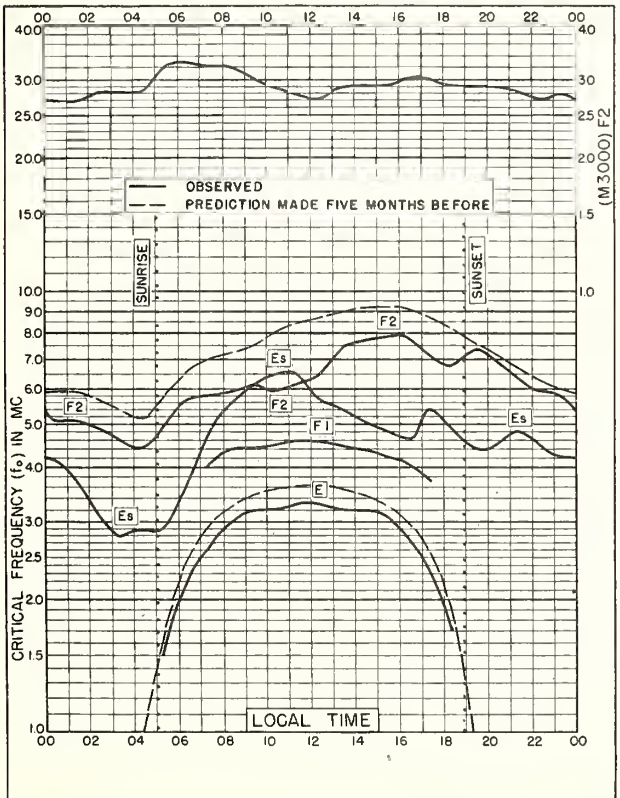

Fig. 95. TOKYO, JAPAN
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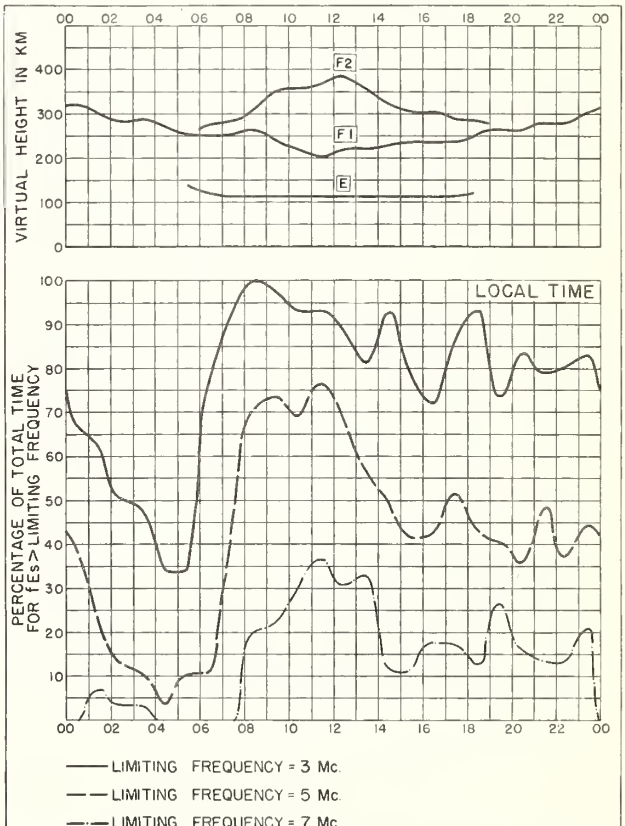

Fig. 96. TOKYO, JAPAN MAY 1952

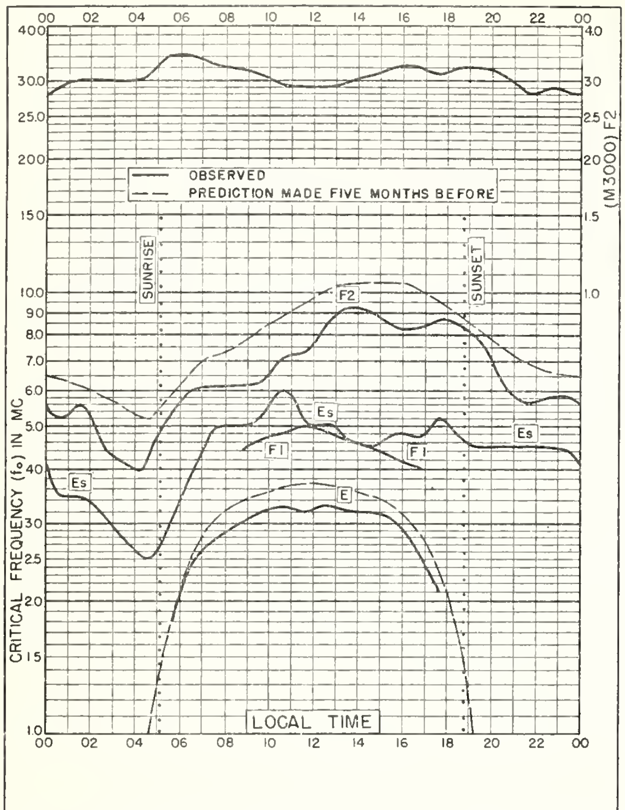

Fig. 97. YAMAGAWA, JAPAN
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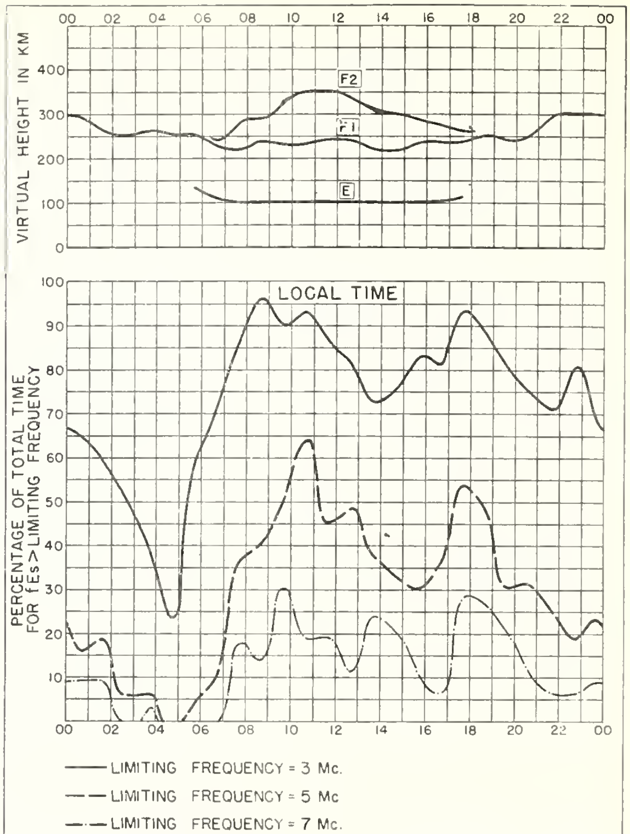
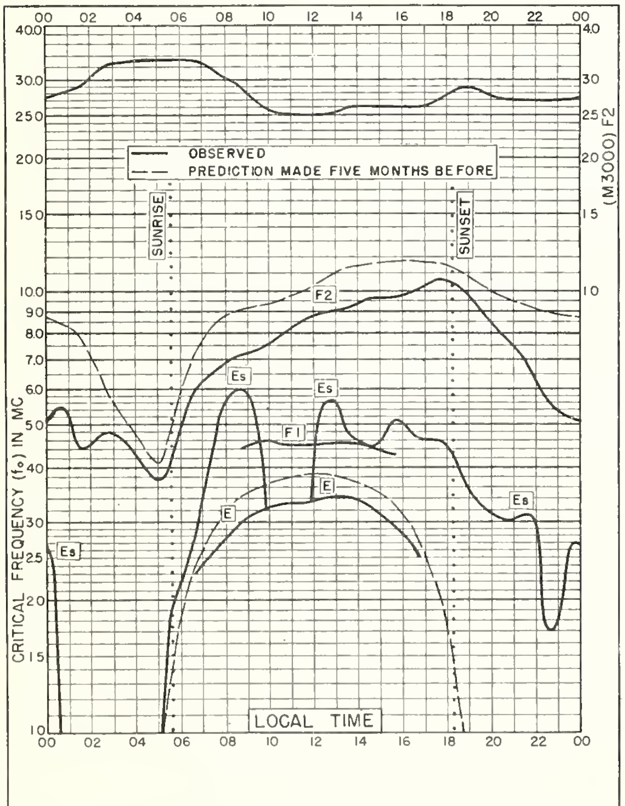


Fig 98. YAMAGAWA, JAPAN MAY 1952



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13.6°N, 144.9°E MAY 1952

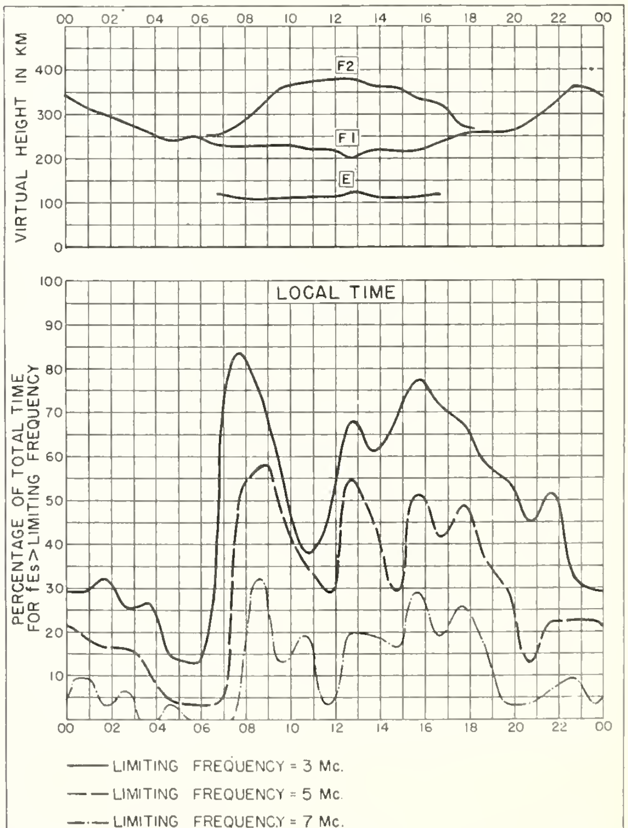

Fig.100. GUAM I. MAY 1952

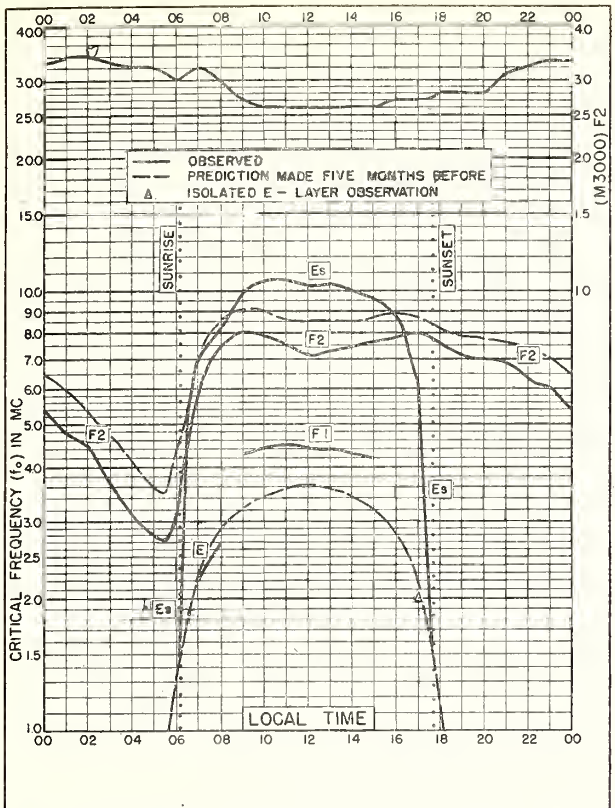

Fig. 101. HUANCAYO, PERU
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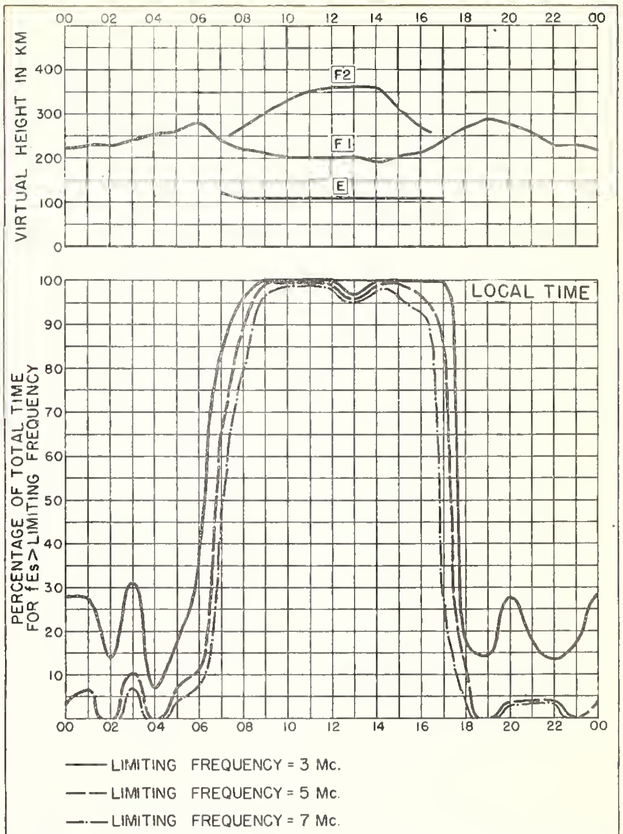
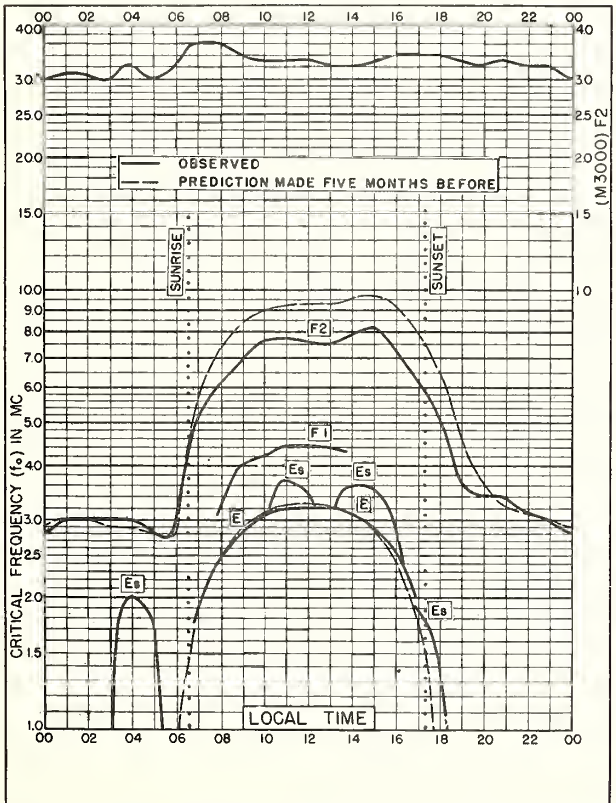


Fig. 102. HUANCAYO, PERU MAY 1952



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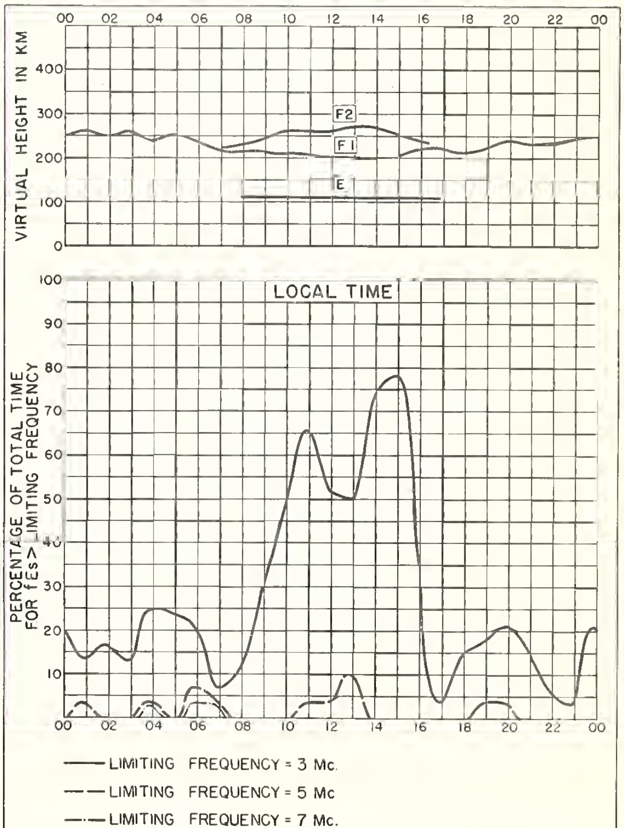

Fig. 104. JOHANNESBURG, U. OF S. AFRICA MAY 1952

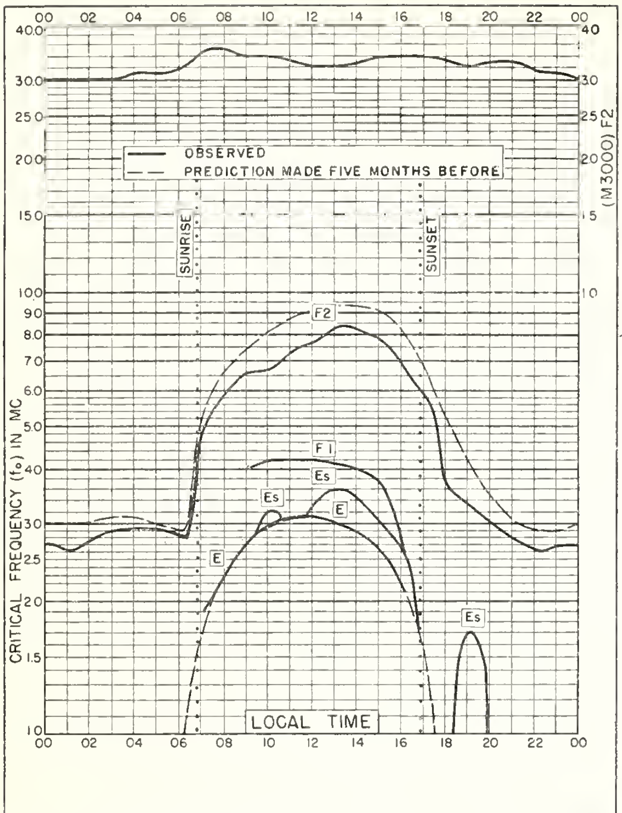

Fig.105. CAPETOWN, U. OF S. AFRICA
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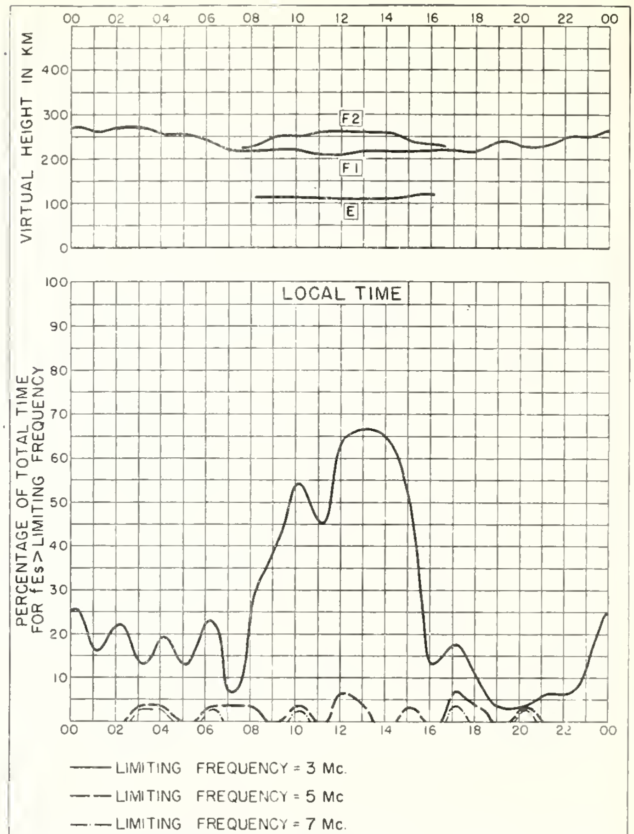

Fig.106. CAPETOWN, U. OF S. AFRICA MAY 1952

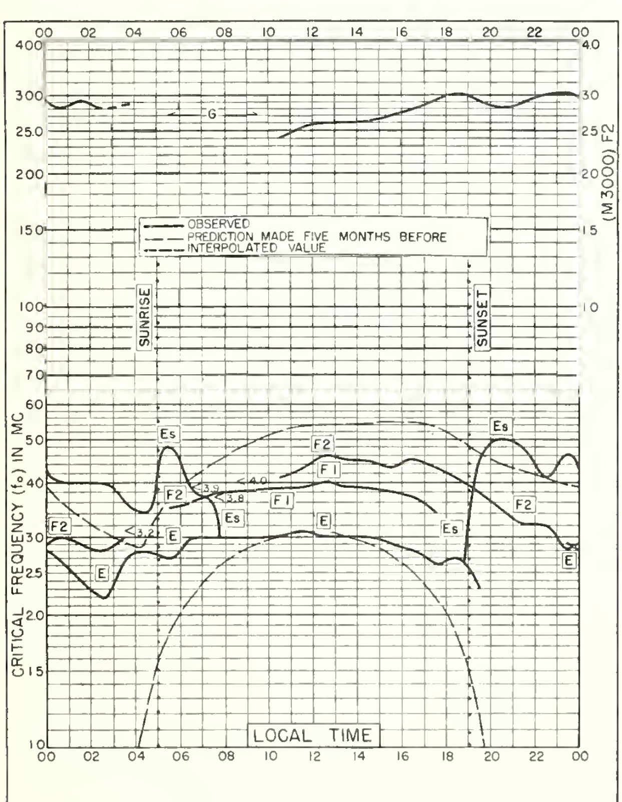

Fig.107. FORT CHIMO, CANADA
58.1°N, 68.3°W APRIL 1952

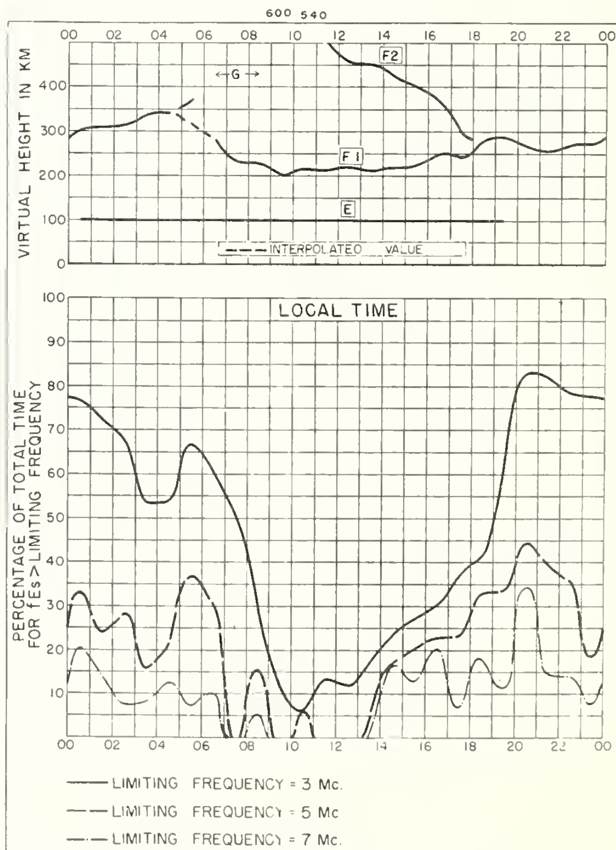

Fig.108. FORT CHIMO, CANADA APRIL 1952

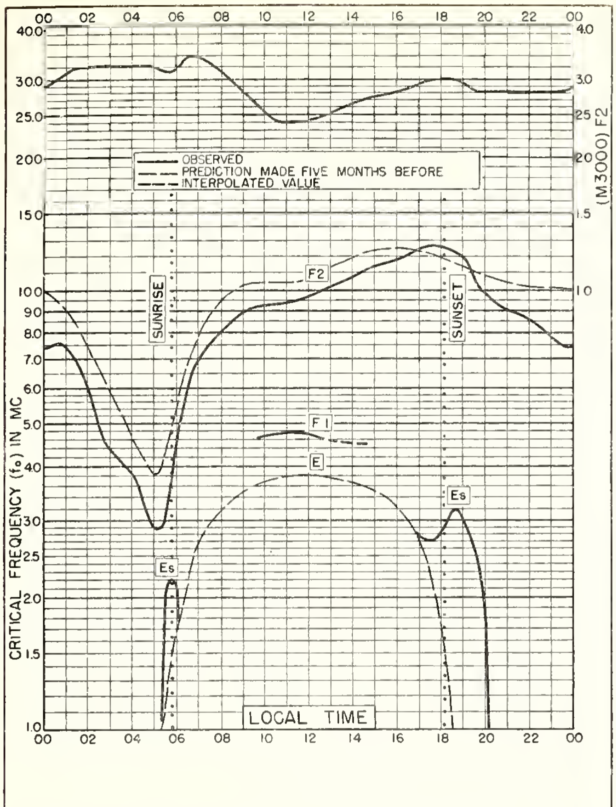

Fig.109. GUAM I.
13.6°N, 144.9°E APRIL 1952

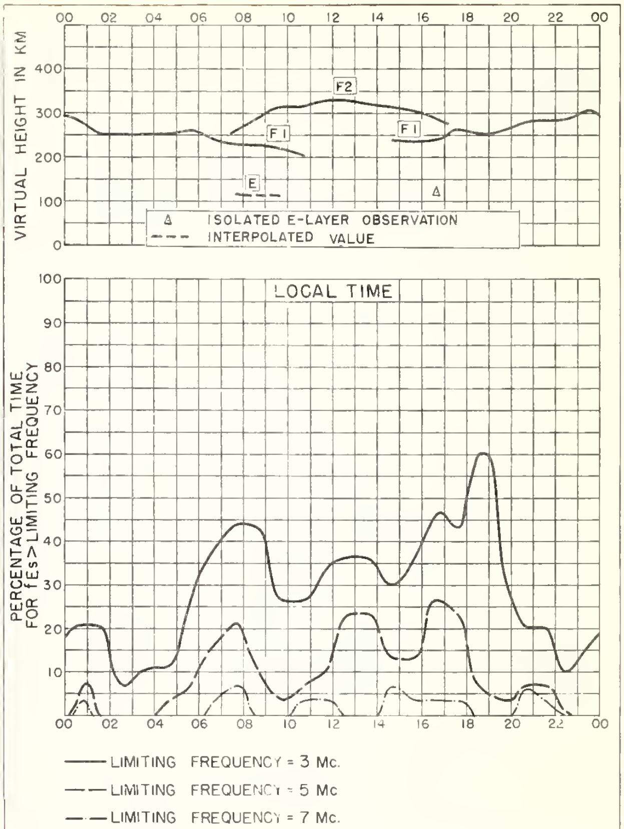

Fig.110. GUAM I. APRIL 1952

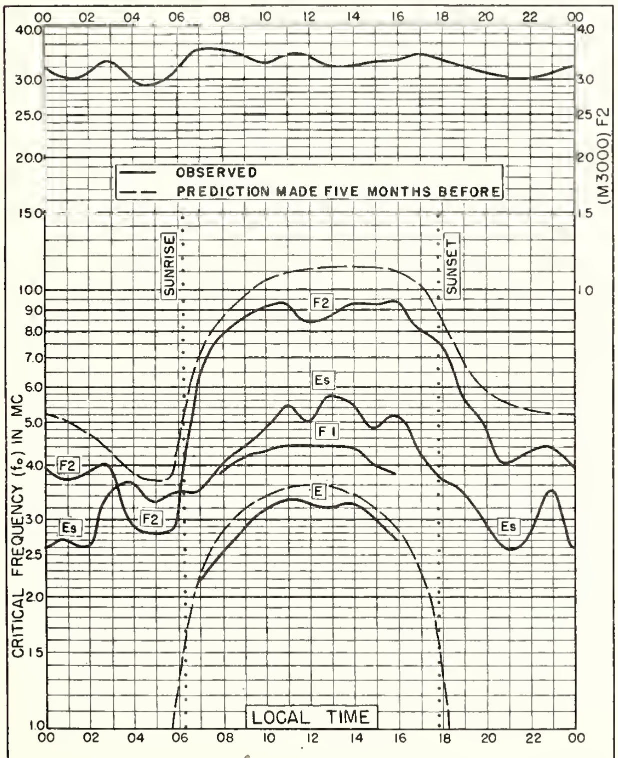

Fig.111. TOWNSVILLE, AUSTRALIA
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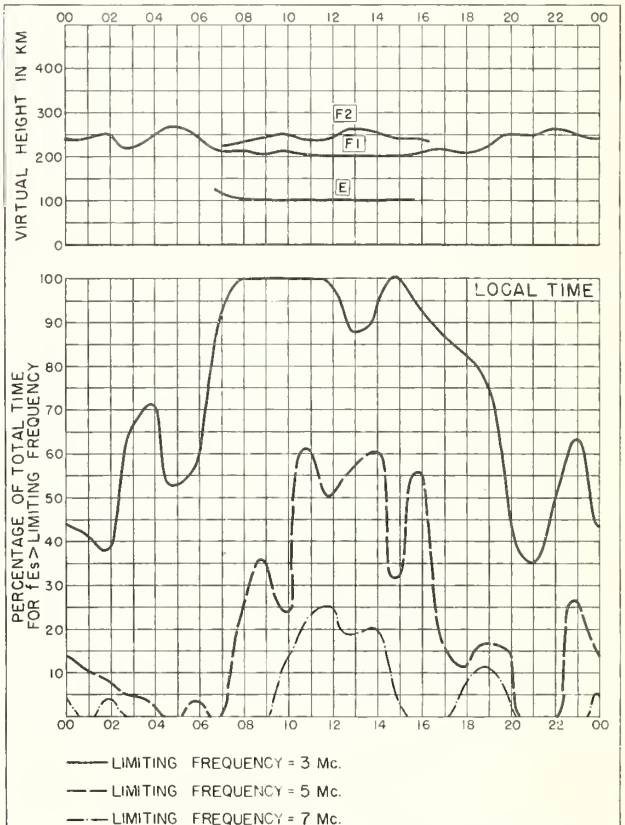

Fig.112. TOWNSVILLE, AUSTRALIA APRIL 1952

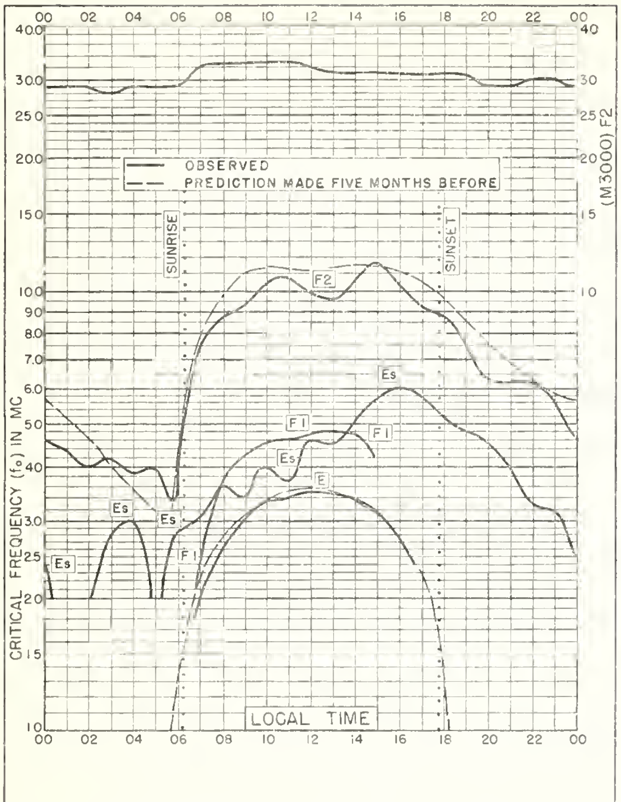

Fig. 113. RAROTONGA I.
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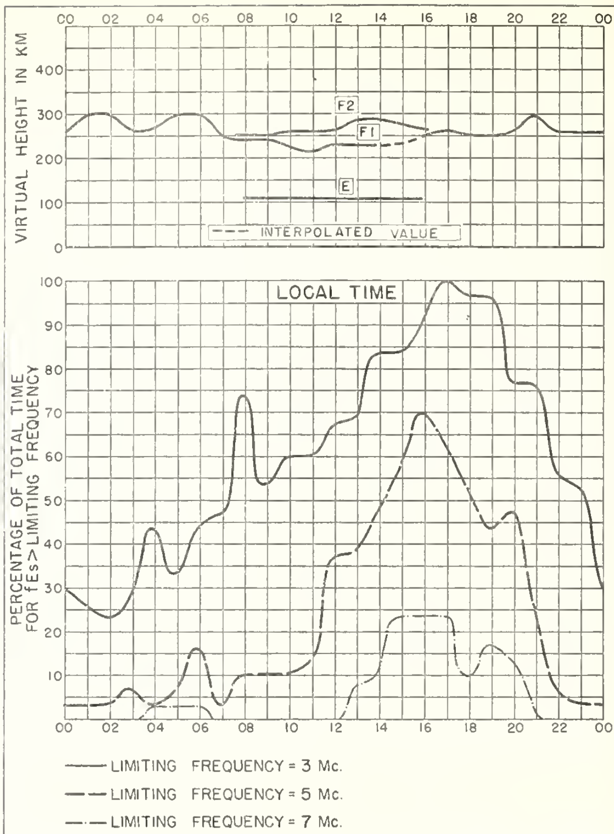

Fig. 114. RAROTONGA I. APRIL 1952

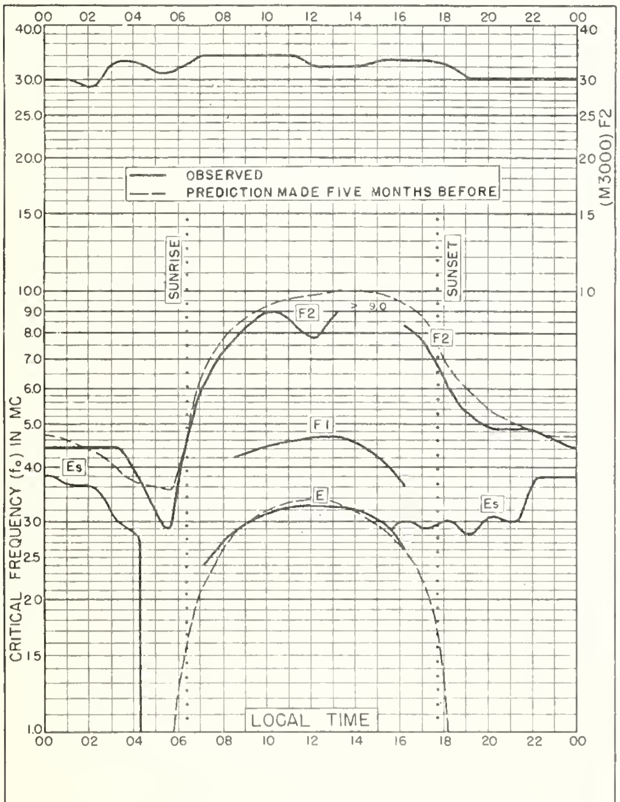

Fig. 115. BRISBANE, AUSTRALIA
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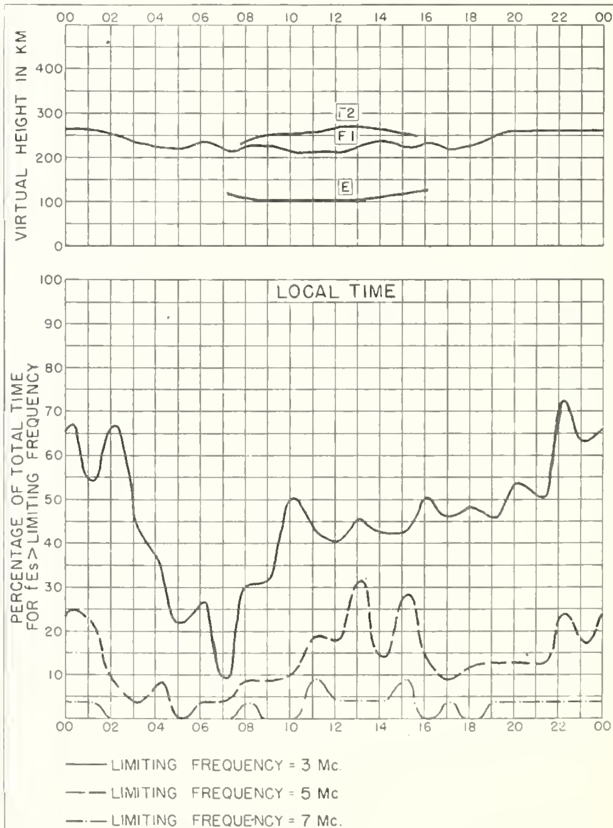

Fig. 116. BRISBANE, AUSTRALIA APRIL 1952

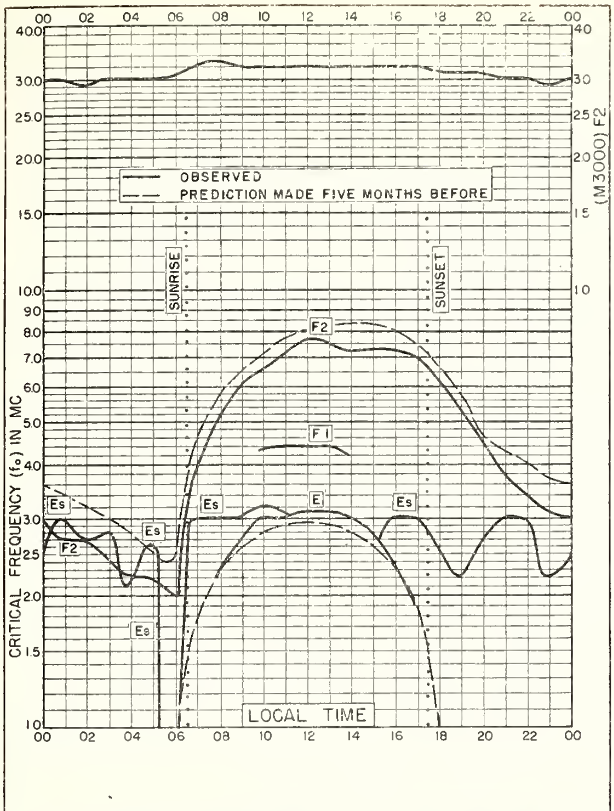

Fig. 117. HOBART, TASMANIA
42.8°S, 147.4°E APRIL 1952

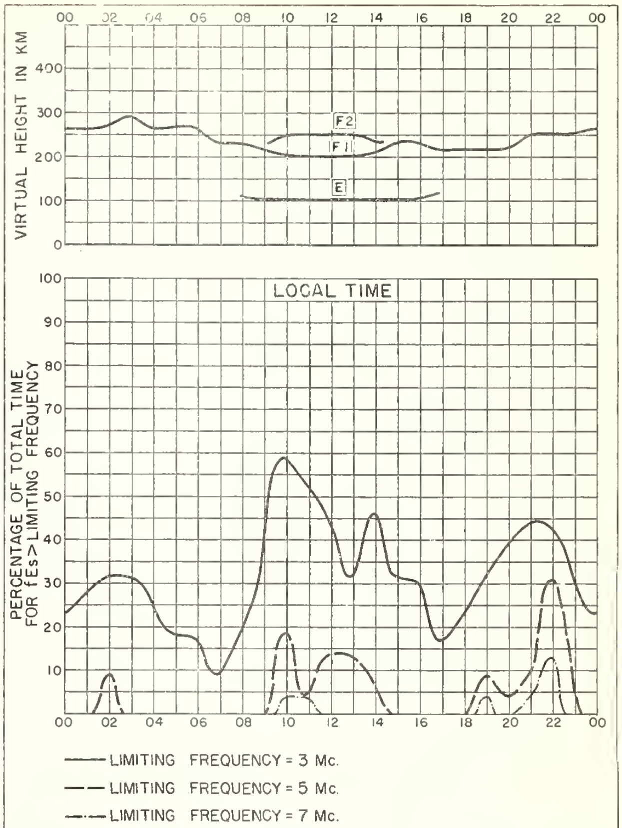

Fig. 118. HOBART, TASMANIA APRIL 1952

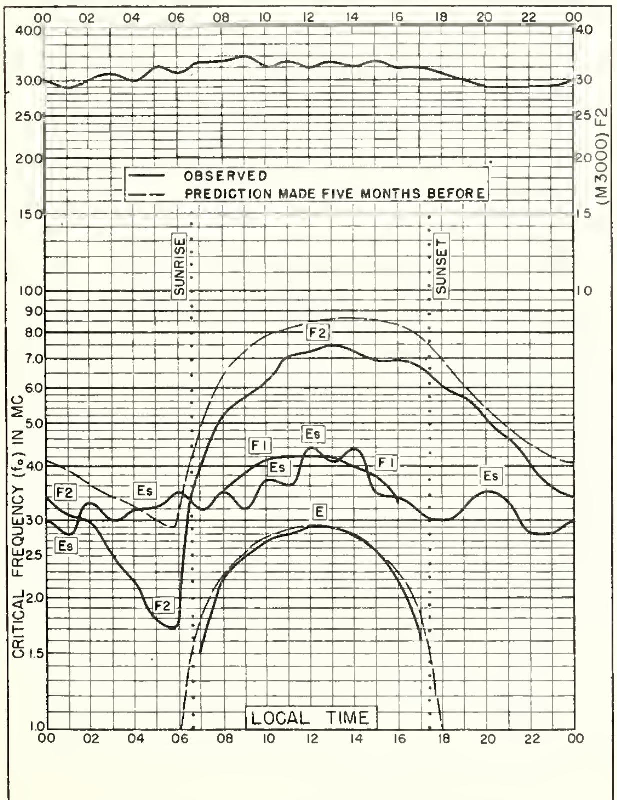

Fig. 119. CHRISTCHURCH, NEW ZEALAND
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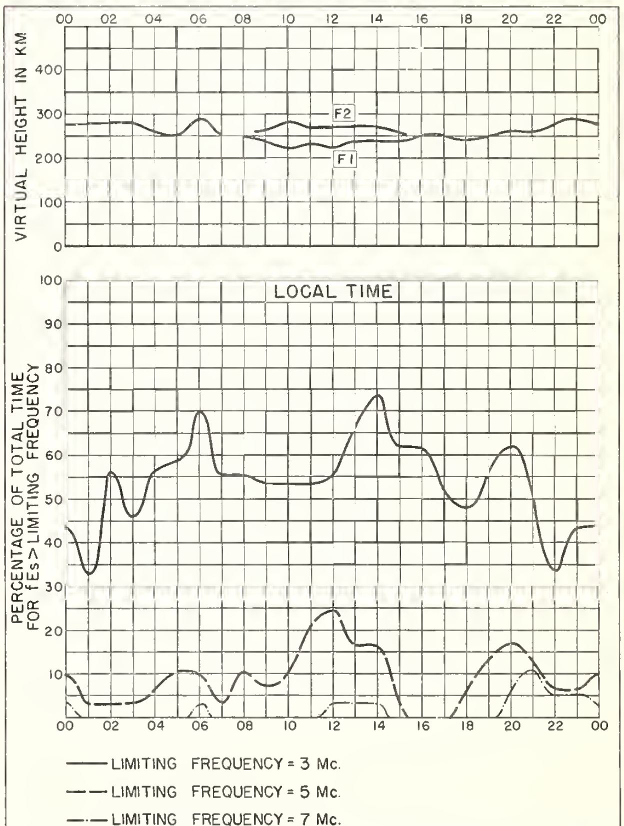

Fig. 120. CHRISTCHURCH, NEW ZEALAND APRIL 1952

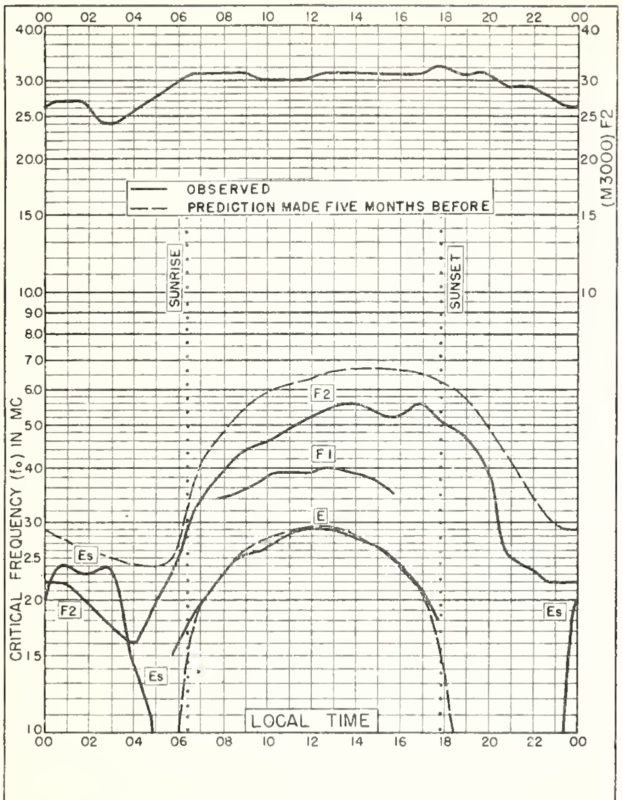

Fig. 121. INVERNESS, SCOTLAND
57.4°N, 4.2°W MARCH 1952

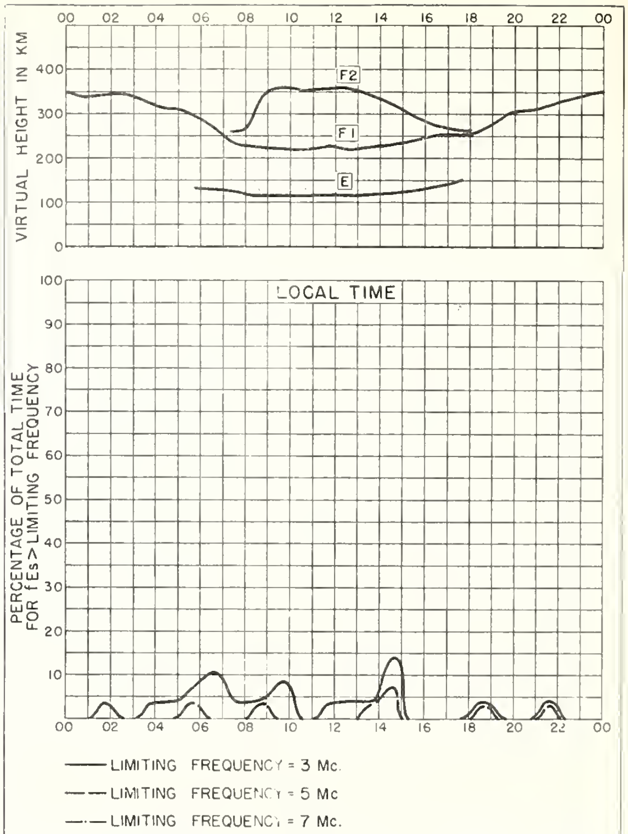

Fig. 122. INVERNESS, SCOTLAND MARCH 1952

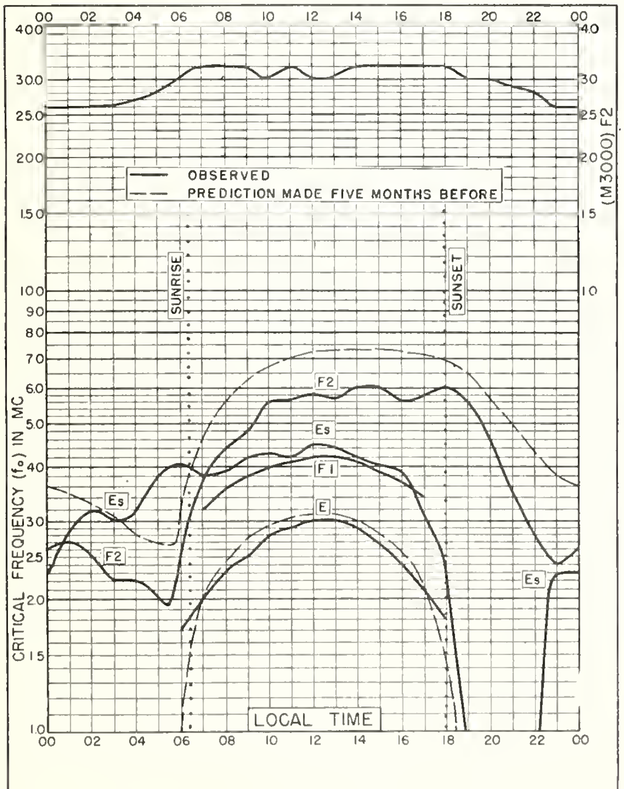

Fig. 123. SLOUGH, ENGLAND
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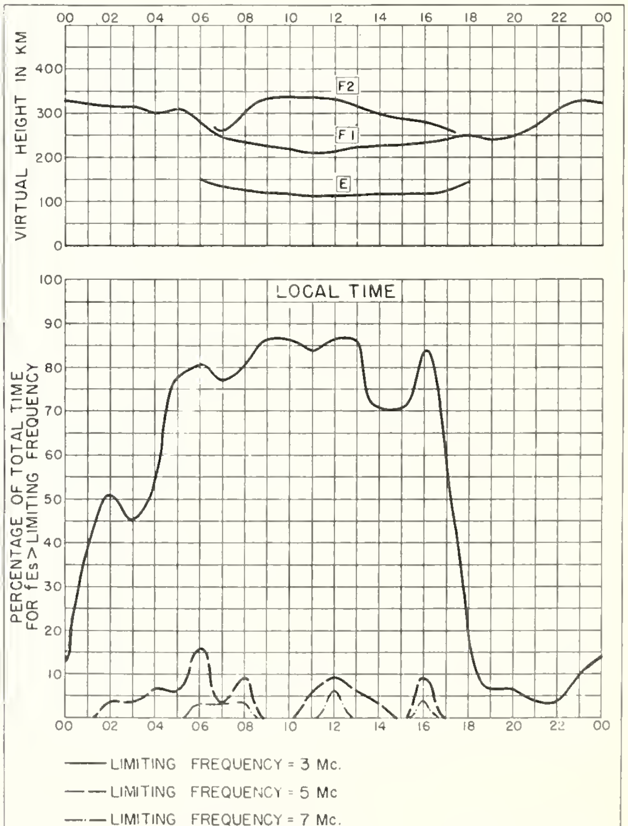


Fig. 124. SLOUGH, ENGLAND MARCH 1952

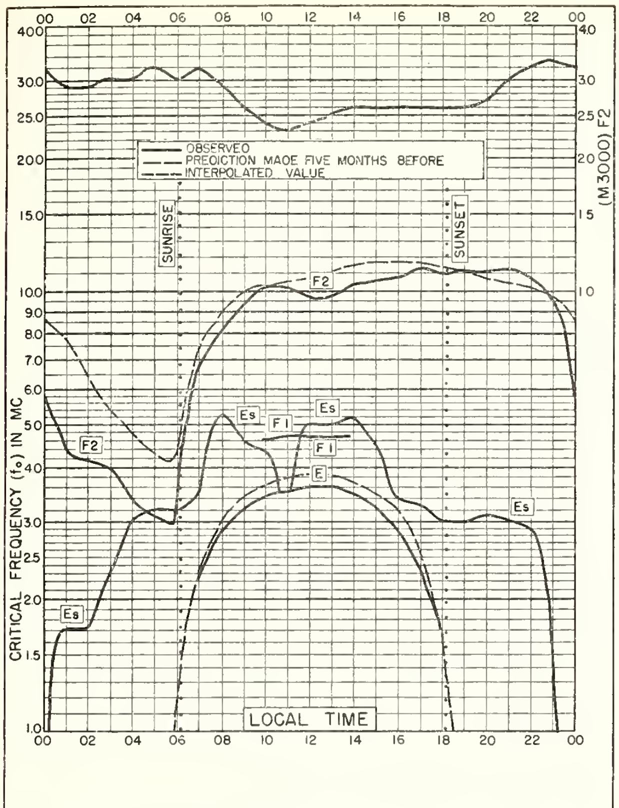


Fig.125. SINGAPORE, BRIT. MALAYA
1.3°N, 103.8°E MARCH 1952

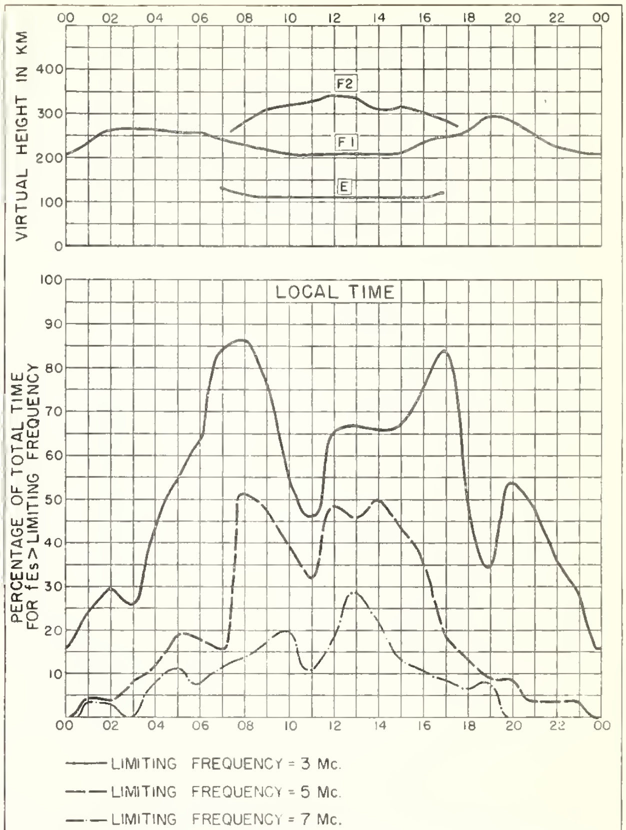
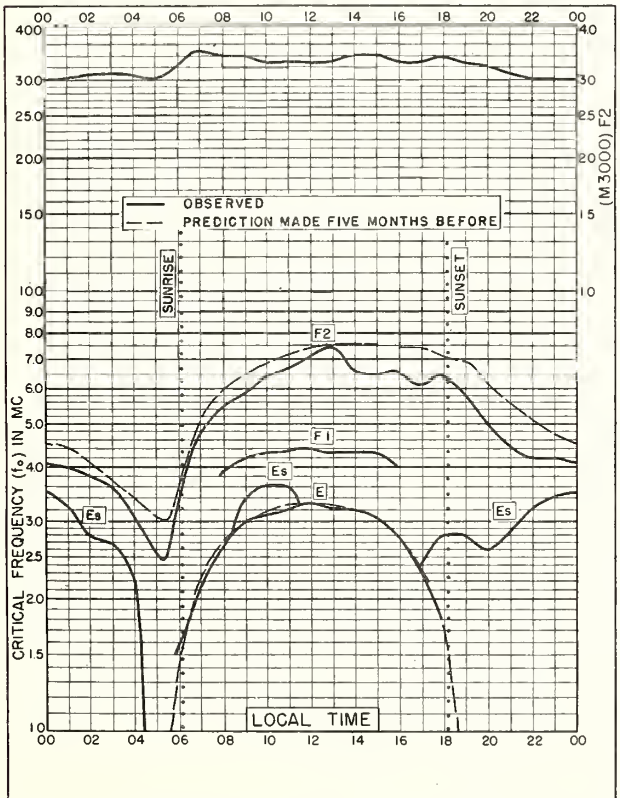


Fig.126. SINGAPORE, BRIT. MALAYA MARCH 1952



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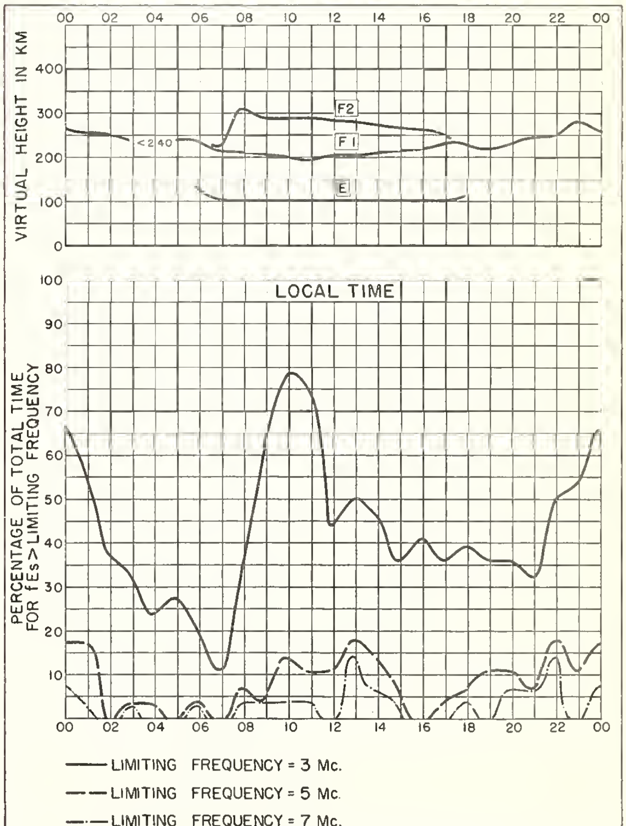
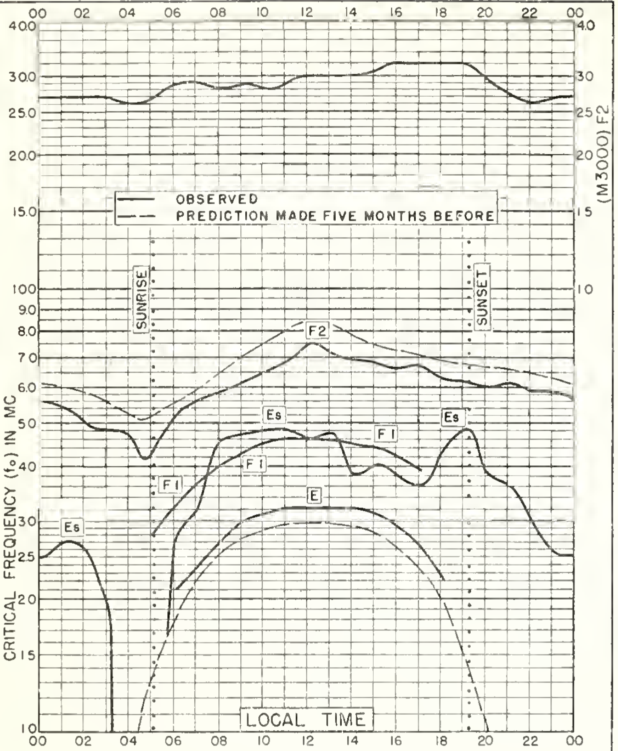


Fig.128. CANBERRA, AUSTRALIA MARCH 1952



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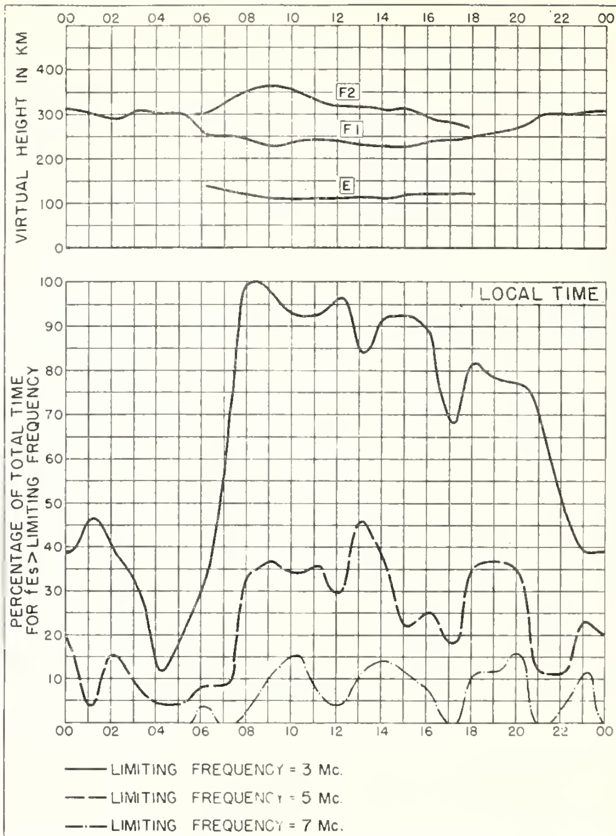

Fig.130. FALKLAND IS. FEBRUARY 1952

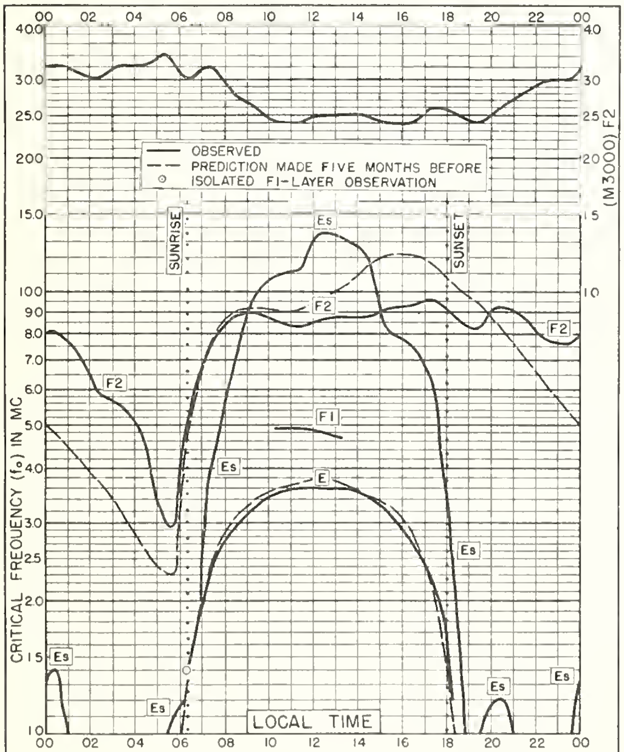

Fig.131. IBADAN, NIGERIA
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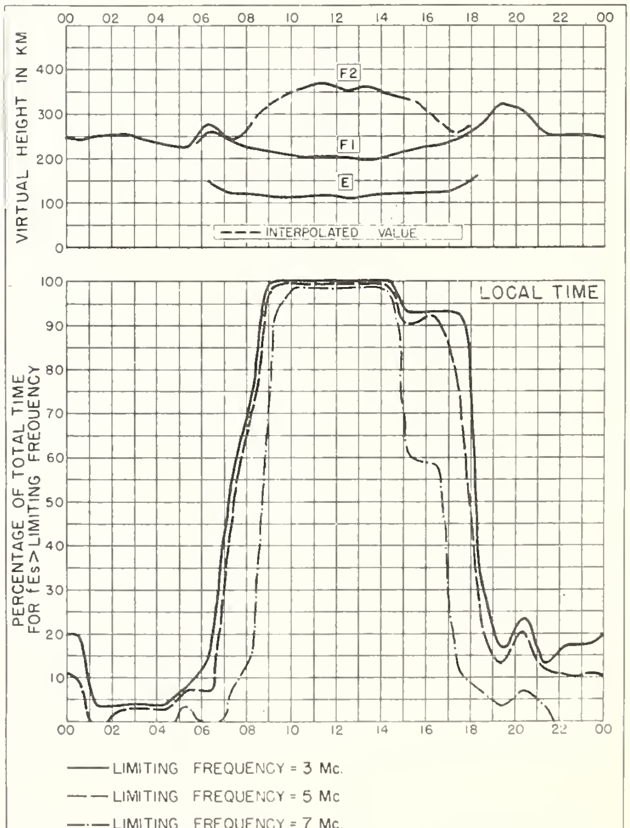

Fig.132. IBADAN, NIGERIA JANUARY 1952

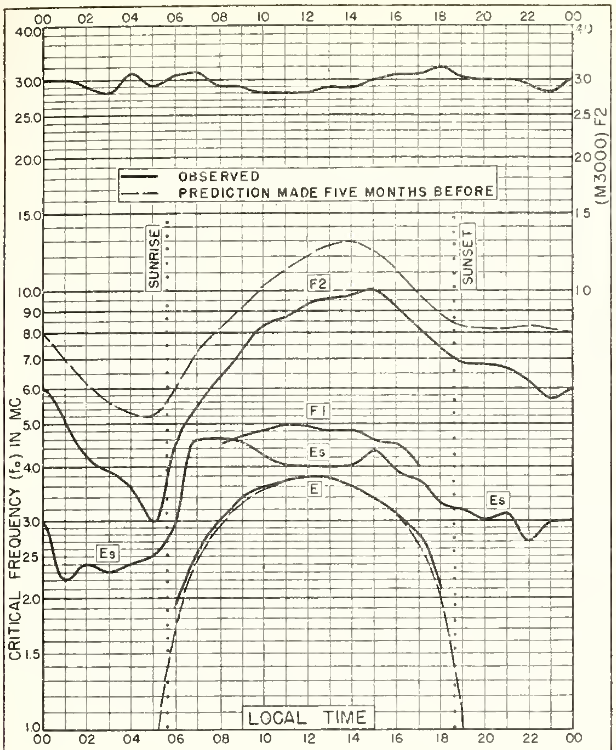

Fig. 133. TANANARIVE, MADAGASCAR
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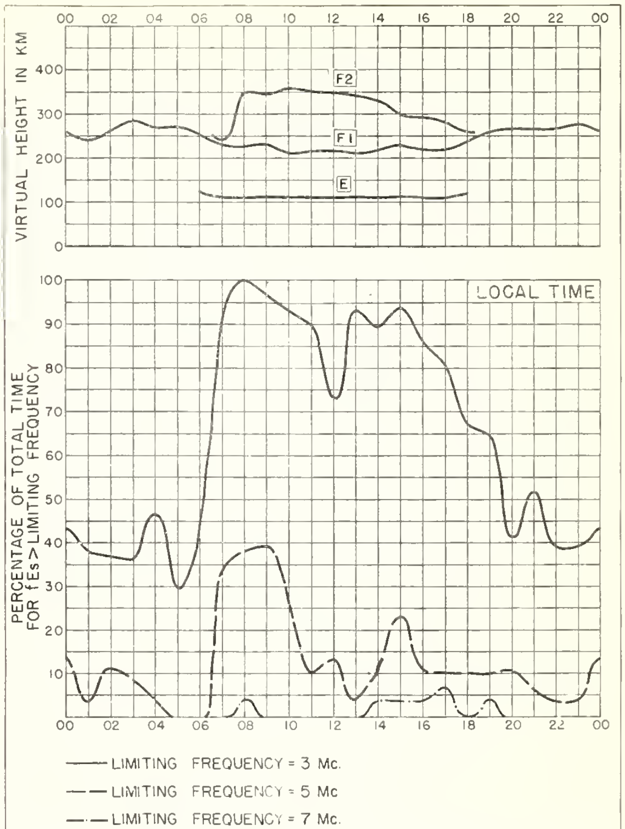

Fig. 134 TANANARIVE, MADAGASCAR JANUARY 1952

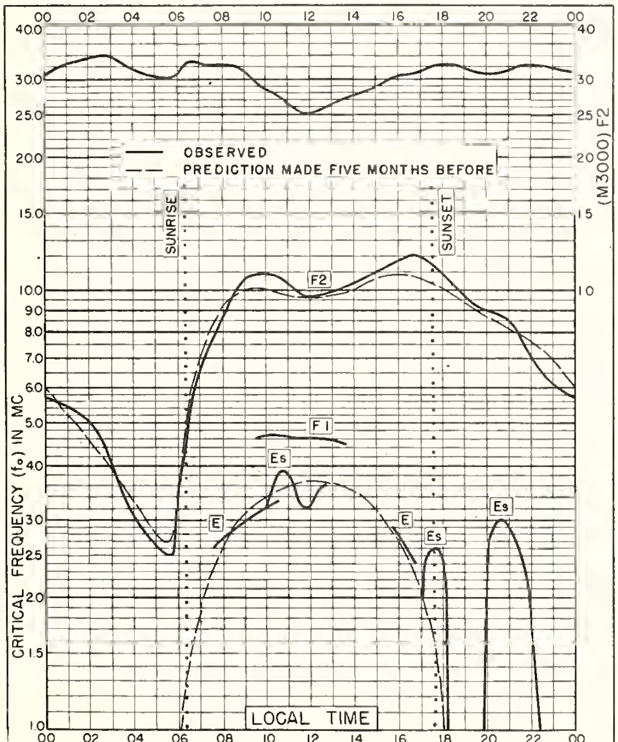

Fig. 135. GUAM I.
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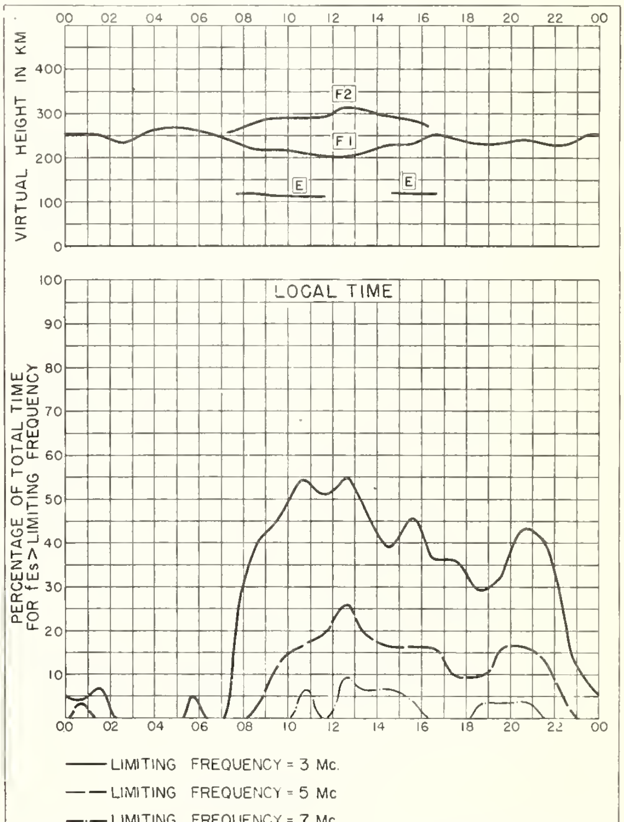

Fig. 136. GUAM I. DECEMBER 1951

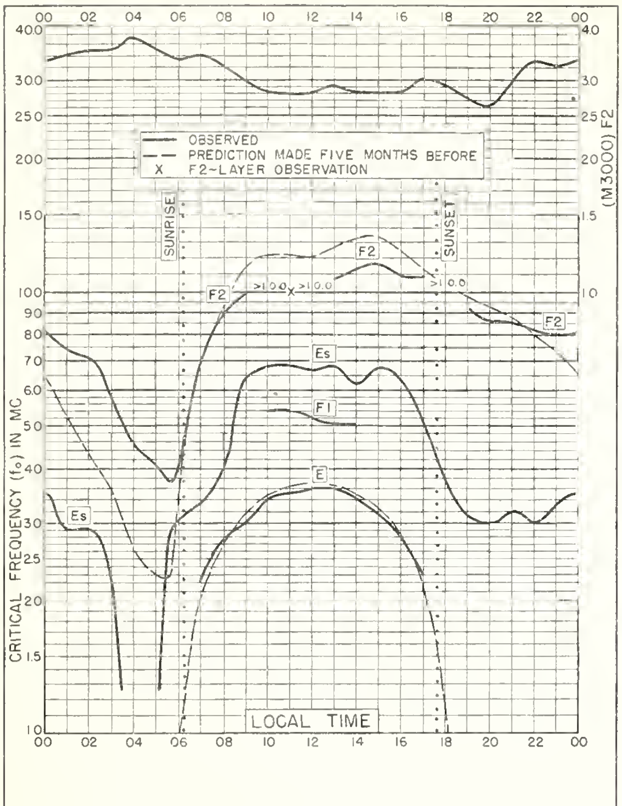

Fig. 137. DJIBOUTI, FRENCH SOMALILAND
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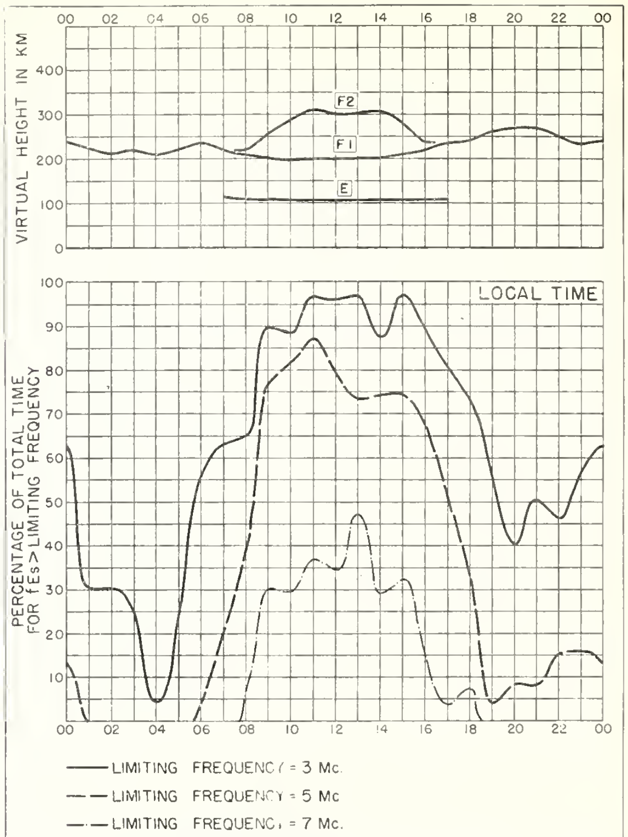

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CRPL and IRPL Reports

[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Navy, DNC 13 ( ) series; Dept. of the Air Force, TO 16-1B-2 series.)
CRPL—F. Ionospheric Data.
*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL—R. Nonscheduled reports:
R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
R5. Criteria for Ionospheric Storminess.
**R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
**R11. A Nomographic Method for both Prediction and Observation Correlation of Ionosphere Characteristics.
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**R17. Japanese Ionospheric Data—1943.
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**R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
**R33. Ionospheric Data on File at IRPL.
**R34. The Interpretation of Recorded Values of *fEs*.
**R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.
IRPL—T. Reports on tropospheric propagation:
T1. Radar operation and weather. (Superseded by JANP 101.)
T2. Radar coverage and weather. (Superseded by JANP 102.)
CRPL—T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG—5.)

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